

D Tabellen

Meßwerte für CO während des Alterungsprozesses

Tabelle C.1: Datensatz Amplitude CO - beim Alterungsprozeß 7.3 Hz .

Reingas CO c(CO)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
10	5,3837	5,2405	5,0655	4,8518	4,5913	4,2733	3,8851
25	13,3934	13,036	12,5991	12,0661	11,4164	10,624	9,6571
50	26,57	25,8562	24,9847	23,9227	22,629	21,0527	19,1304
100	52,2883	50,8654	49,1319	47,0234	44,459	41,3394	37,5404
500	230,8435	223,9371	215,6497	205,7025	193,7554	179,385	162,0737
1250	466,7044	450,5493	431,578	409,2571	382,94	351,8403	315,0128
2500	689,6089	661,0933	628,3959	590,799	547,4454	497,3168	439,2234
3750	803,3765	765,7137	723,2104	675,0872	620,4471	558,2327	487,2541
5000	863,6907	819,2894	769,7286	714,2437	651,9463	581,8254	502,765

Tabelle C.2: Datensatz Phase CO - beim Alterungsprozeß 7.3 Hz .

Reingas CO c(CO)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
10	-36,1573	-36,4614	-36,7693	-37,0732	-37,3602	-37,6078	-37,7761
25	-36,1586	-36,4618	-36,7687	-37,0715	-37,3571	-37,6032	-37,7696
50	-36,1608	-36,4624	-36,7676	-37,0686	-37,352	-37,5956	-37,7588
100	-36,1648	-36,4635	-36,7653	-37,0625	-37,3416	-37,5801	-37,737
500	-36,1862	-36,4613	-36,7369	-37,0043	-37,2494	-37,4472	-37,5535
1250	-36,1787	-36,412	-36,6407	-36,8547	-37,0375	-37,1602	-37,171
2500	-36,0547	-36,2249	-36,3821	-36,5135	-36,598	-36,5993	-36,4506
3750	-35,8325	-35,9471	-36,0404	-36,0966	-36,09	-35,9753	-35,6688
5000	-35,5491	-35,6141	-35,6498	-35,6375	-35,5461	-35,3213	-34,8602

Meßwerte für CO₂ während des Alterungsprozesses

Tabelle C.3: Datensatz Amplitude CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingas CO ₂ c(CO ₂)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)						
	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	0,001	0,0009	0,0009	0,0008	0,0008	0,0007	0,0007
50000	0,8712	0,8471	0,8281	0,8159	0,8117	0,8168	0,8318
100000	1,6189	1,5634	1,5199	1,492	1,4834	1,4968	1,5342
150000	2,3619	2,2713	2,1997	2,1528	2,1369	2,1571	2,2155
200000	3,0996	2,972	2,8701	2,8025	2,7775	2,8032	2,8822

Tabelle C.4: Datensatz Phase CO₂- beim Alterungsprozeß 7.3 Hz .

Reingas CO ₂ c(CO ₂)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)						
	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	113,717	113,9349	114,2277	114,6165	115,1179	115,7489	116,5381
50000	67,8181	71,9405	76,5417	81,5993	87,0249	92,6757	98,3914
100000	59,4915	64,3484	69,8197	75,8602	82,3466	89,0708	95,7868
150000	55,6219	60,77	66,6098	73,0892	80,0747	87,3227	94,5181
200000	53,2308	58,5312	64,576	71,3221	78,6055	86,1874	93,6975

Regressionsanalyse für die Meßwerte von CO/CO₂ über das Amplitudenmodell

Tabelle C.5: Polynomische Regression für p_0 : $p_0 = a_0 + b_0f + c_0f^2 + d_0f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₀	-0,412191121	0,034615898	-11,9075669	0,001273748
b ₀	3,71059288	0,108193213	34,29598574	<0.0001
c ₀	-1,995598081	0,110272619	-18,09695001	3,68E-04
d ₀	0,405124028	0,036705141	11,03725564	0,001592942
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999996704	0,999993408	5,39E-04	7

Tabelle C.6: ANOVA Table: Polynomische Regression für p_0 : $p_0 = a_0 + b_0f + c_0f^2 + d_0f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	3	0,264881047	0,088293682	303404,5416	<0.0001
Error	3	8,73E-07	2,91E-07		
Total	6	2,65E-01			

Tabelle C.7: Polynomische Regression für p_1 : $p_1 = a_1 + b_1f + c_1f^2 + d_1f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₁	-0,153014901	0,006326566	-24,18609292	1,55E-04
b ₁	1,1682557	0,019773904	59,08067992	<0.0001
c ₁	-0,696731839	0,020153946	-34,57049194	<0.0001
d ₁	0,153271222	0,006708406	22,84763823	1,84E-04
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999998317	0,999996634	9,86E-05	7

Tabelle C.8: ANOVA Table: Polynomische Regression für p_1 : $p_1 = a_1 + b_1f + c_1f^2 + d_1f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _t F
Model	3	0,017329517	0,005776506	594254,9803	<0.0001
Error	3	2,92E-08	9,72E-09		
Total	6	0,017329546			

Tabelle C.9: Polynomische Regression für p_2 : $p_2 = a_2 + b_2f + c_2f^2 + d_2f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₂	2,37E-05	2,78E-06	8,517069469	0,003399825
b ₂	-3,50E-04	8,70E-06	-40,24314765	<0.0001
c ₂	2,41E-04	8,87E-06	27,13495672	1,10E-04
d ₂	-5,64E-05	2,95E-06	-19,0975994	3,14E-04
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999989471	0,999978942	4,34E-08	7

Tabelle C.10: ANOVA Table: Polynomische Regression für p_2 : $p_2 = a_2 + b_2f + c_2f^2 + d_2f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _t F
Model	3	5,37E-10	1,79E-10	94974,99282	<0.0001
Error	3	5,65E-15	1,88E-15		
Total	6	5,37E-10			

Tabelle C.11: Polynomische Regression für p_3 : $p_3 = a_3 + b_3f + c_3f^2 + d_3f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₃	-1,99E-09	5,26E-10	-3,789638376	0,032230997
b ₃	5,53E-08	1,65E-09	33,63281908	<0.0001
c ₃	-4,03E-08	1,68E-09	-24,06078414	1,57E-04
d ₃	9,72E-09	5,58E-10	17,40824884	4,13E-04
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999969734	0,999939467	8,20E-12	7

Tabelle C.12: ANOVA Table: Polynomische Regression für p_3 : $p_3 = a_3 + b_3f + c_3f^2 + d_3f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _t F
Model	3	6,67E-18	2,22E-18	222,333065	5,08E-04
Error	3	2,02E-22	1,00E-20		
Total	6	6,67E-18			

Tabelle C.13: Polynomische Regression für $p_4: p_4 = a_4 + b_4f + c_4f^2 + d_4f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₄	1,47E-13	3,17E-14	4,651175639	0,018743528
b ₄	-3,86E-12	9,91E-14	-38,91606846	<0.0001
c ₄	2,98E-12	1,01E-13	29,46978854	<0.0001
d ₄	-7,58E-13	3,36E-14	-22,53740999	1,91E-04
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999961532	1,00E+00	4,94E-16	7

Tabelle C.14: ANOVA Table:Polynomische Regression für $p_4: p_4 = a_4 + b_4f + c_4f^2 + d_4f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	3	1,90E-26	6,34E-27	6,34E-07	0,999999999
Error	3	7,32E-31	1,00E-20		
Total	6	1,90E-26			

Tabelle C.15: Polynomische Regression für $p_5: p_5 = a_5 + b_5f + c_5f^2 + d_5f^3$.

Parameter	Value	Error	t-Value	Prob _t
a ₅	-1,37E-05	4,19E-07	-32,80784888	<0.0001
b ₅	-1,18E-05	1,31E-06	-9,047282757	0,002851924
c ₅	1,52E-05	1,33E-06	11,40357227	0,001446952
d ₅	-4,09E-06	4,44E-07	-9,204196079	0,002712435
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999987571	1,00E+00	6,53E-09	7

Tabelle C.16: ANOVA Table:Polynomische Regression für $p_5: p_5 = a_5 + b_5f + c_5f^2 + d_5f^3$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	3	1,03E-11	3,43E-12	80453,51891	<0.0001
Error	3	1,28E-16	4,26E-17		
Total	6	1,03E-11			

Tabelle C.17: Regression für A: $A = p_0 + p_1c(CO) + p_2c(CO)^2 + p_3c(CO)^3 + p_4c(CO)^4 + p_5c(CO_2)$.

Alter	P ₀	P ₁	P ₂	P ₃	P ₄	P ₅
1,3	1,92908	0,52498	-1,48705E-04	2,31013E-08	-1,49993E-12	-1,24075E-05
1,2	1,86691	0,51045	-1,47410E-04	2,30975E-08	-1,50305E-12	-1,31099E-05
1,1	1,79401	0,49302	-1,45361E-04	2,29863E-08	-1,50119E-12	-1,38024E-05
1,0	1,70793	0,47178	-1,42219E-04	2,27095E-08	-1,48982E-12	-1,44603E-05
0,9	1,60624	0,44580	-1,37646E-04	2,22088E-08	-1,46438E-12	-1,50592E-05
0,8	1,48652	0,41416	-1,31304E-04	2,14258E-08	-1,42033E-12	-1,55745E-05
0,7	1,34634	0,37594	-1,22855E-04	2,03023E-08	-1,35312E-12	-1,59816E-05

Kalibrationsergebnisse der Regressionsanalyse für die CO-Bestimmung über das Amplitudenmodell

Tabelle C.18: Datensatz Amplitude Mischung CO/CO₂ - beim Alterungsprozess
7,3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	5,382	5,239	5,064	4,8505	4,5899	4,2722	3,8841
50000	10	5,2419	5,0394	4,8017	4,522	4,1923	3,8028	3,3419
100000	10	5,4568	5,1753	4,8557	4,4916	4,0755	3,5991	3,0545
150000	10	5,7884	5,4287	5,0293	4,5842	4,0883	3,5361	2,9284
200000	10	6,2044	5,7714	5,2977	4,7794	4,2145	3,6049	2,9657
15	25	13,3916	13,0342	12,5974	12,0646	11,4149	10,6227	9,6558
50000	25	13,1946	12,7807	12,2838	11,6873	10,9708	10,1087	9,0704
100000	25	13,2916	12,8011	12,224	11,5444	10,7414	9,7904	8,6624
150000	25	13,461	12,8914	12,2323	11,4672	10,576	9,5349	8,3169
200000	25	13,6852	13,0358	12,2943	11,4437	10,465	9,3351	8,0304
15	50	26,5679	25,8542	24,9829	23,921	22,6274	21,0512	19,1291
50000	50	26,3328	25,5641	24,6344	23,5108	22,1522	20,5084	18,5173
100000	50	26,3697	25,527	24,5197	23,3154	21,8729	20,1425	18,0635
150000	50	26,4598	25,5405	24,4535	23,1659	21,6383	19,8192	17,6504
200000	50	26,589	25,592	24,4241	23,0526	21,4371	19,5289	17,2708
15	100	52,2861	50,8635	49,1301	47,0218	44,4575	41,338	37,5393
50000	100	51,9951	50,5197	48,7307	46,5626	43,9371	40,7538	36,8899
100000	100	51,9664	50,4192	48,5554	46,3101	43,6039	40,3378	36,39
150000	100	51,9805	50,36	48,4196	46,0947	43,3061	39,9554	35,9219
200000	100	52,0248	50,3297	48,3118	46,0947	43,034	39,5976	35,4775
15	500	230,8412	223,9346	215,6476	205,7003	193,7539	179,3834	162,0723
50000	500	230,2034	223,2574	214,9307	204,9449	192,9539	178,5485	161,1979
100000	500	229,819	222,8154	214,4306	204,3869	192,3371	177,874	160,4671
150000	500	229,474	222,4086	213,9656	203,859	191,7487	177,2268	159,7629
200000	500	229,1497	222,026	213,5217	203,3536	191,1823	176,5994	159,0774
15	1250	466,7014	450,5469	431,5758	409,2557	382,9387	351,84	315,0121
50000	1250	465,5967	449,4304	430,4507	408,1199	381,7978	350,6889	313,8653
100000	1250	464,7495	448,5534	429,5385	407,1773	380,8286	349,6935	312,8658
150000	1250	463,942	447,7085	428,6577	406,2678	379,8918	348,7336	311,8895
200000	1250	463,1599	446,8882	427,8061	405,3805	378,975	347,7934	310,9304
15	2500	689,6072	661,0914	628,394	590,7979	547,4441	497,3158	439,2228
50000	2500	688,0569	659,5482	626,87	589,305	545,9855	495,9013	437,8663
100000	2500	686,7604	658,2554	625,576	588,0237	544,7255	494,6687	436,6641
150000	2500	685,5045	656,9877	624,311	586,7606	543,4739	493,4418	435,4791
200000	2500	684,2809	655,7581	623,0753	585,5224	542,2458	492,2411	434,3044
15	3750	803,3752	765,7131	723,21	675,087	620,4467	558,2327	487,2534
50000	3750	801,5804	763,9507	721,4953	673,4292	618,8425	556,7115	485,8202
100000	3750	800,0535	762,442	720,0096	671,9815	617,4418	555,3691	484,54
150000	3750	798,561	760,9632	718,5544	670,5544	616,0542	554,0363	483,2746
200000	3750	797,0975	759,5166	717,1309	669,1533	614,6904	552,7189	482,0228
15	5000	863,6902	819,2885	769,7281	714,2433	651,9457	581,8246	502,7648
50000	5000	861,7645	817,4101	767,9188	712,5071	650,2863	580,267	501,3143
100000	5000	860,1081	815,7904	766,3409	710,9824	648,8275	578,89	500,0139
150000	5000	858,4851	814,1993	764,7888	709,4822	647,3868	577,5153	498,7306
200000	5000	856,8975	812,641	763,2736	708,0054	645,9634	576,1609	497,4659

Tabelle C.19: Validierte Amplitude Mischung CO/CO₂ - beim Alterungsprozeß
7.3 Hz .

Reingase CO ₂ / CO		$A = p_0 + p_1c(CO) + p_2c(CO)^2 + p_3c(CO)^3 + p_4c(CO)^4 + p_5c(CO_2)$ Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	7,1638	6,9565	6,7095	6,4113	6,0502	5,6147	5,0932
50000	10	6,5436	6,3012	6,0196	5,6885	5,2975	4,8363	4,2944
100000	10	5,9233	5,6457	5,3295	4,9655	4,5446	4,0575	3,4953
150000	10	5,3029	4,9902	4,6394	4,2425	3,7916	3,2788	2,6962
200000	10	4,6825	4,3347	3,9493	3,5195	3,0386	2,5001	1,8971
15	25	14,9607	14,5362	14,0289	13,4137	12,6653	11,7585	10,6681
50000	25	14,3406	13,8809	13,3390	12,6909	11,9125	10,9800	9,8692
100000	25	13,7202	13,2254	12,6489	11,9679	11,1596	10,2013	9,0701
150000	25	13,0998	12,5699	11,9588	11,2449	10,4066	9,4225	8,2711
200000	25	12,4794	11,9144	11,2687	10,5218	9,6537	8,6438	7,4720
15	50	27,8089	27,0236	26,0845	24,9440	23,5545	21,8685	19,8384
50000	50	27,1887	26,3683	25,3946	24,2212	22,8018	21,0900	19,0395
100000	50	26,5683	25,7128	24,7045	23,4982	22,0488	20,3113	18,2404
150000	50	25,9479	25,0573	24,0144	22,7752	21,2959	19,5326	17,4414
200000	50	25,3276	24,4018	23,3242	22,0522	20,5429	18,7538	16,6423
15	100	52,9625	51,4606	49,6655	47,4861	44,8313	41,6101	37,7315
50000	100	52,3424	50,8053	48,9756	46,7633	44,0786	40,8317	36,9326
100000	100	51,7220	50,1498	48,2855	46,0403	43,3256	40,0529	36,1335
150000	100	51,1016	49,4943	47,5954	45,3173	42,5727	39,2742	35,3345
200000	100	50,4812	48,8388	46,9052	44,5943	41,8197	38,4955	34,5354
15	500	230,0352	223,0328	214,7455	204,7887	192,7776	178,3277	161,0542
50000	500	229,4150	222,3775	214,0556	204,0659	192,0249	177,5492	160,2554
100000	500	228,7947	221,7220	213,3655	203,3429	191,2719	176,7705	159,4563
150000	500	228,1743	221,0665	212,6754	202,6198	190,5190	175,9918	158,6572
200000	500	227,5539	220,4110	211,9852	201,8968	189,7660	175,2130	157,8582
15	1250	467,2564	451,0446	432,1789	409,9333	383,5817	352,3979	315,6559
50000	1250	466,6362	450,3893	431,4890	409,2105	382,8289	351,6194	314,8570
100000	1250	466,0158	449,7338	430,7989	408,4875	382,0760	350,8407	314,0579
150000	1250	465,3954	449,0783	430,1088	407,7645	381,3230	350,0619	313,2589
200000	1250	464,7751	448,4228	429,4187	407,0415	380,5701	349,2832	312,4598
15	2500	687,3305	658,8657	626,3725	588,9307	545,6200	495,5200	437,7104
50000	2500	686,7103	658,2104	625,6826	588,2079	544,8673	494,7415	436,9116
100000	2500	686,0900	657,5549	624,9925	587,4849	544,1143	493,9628	436,1125
150000	2500	685,4696	656,8994	624,3024	586,7619	543,3613	493,1841	435,3134
200000	2500	684,8492	656,2439	623,6122	586,0389	542,6084	492,4053	434,5144
15	3750	801,0398	763,8996	721,8046	673,8860	619,2749	557,1025	486,5000
50000	3750	800,4196	763,2443	721,1147	673,1632	618,5222	556,3241	485,7012
100000	3750	799,7993	762,5888	720,4246	672,4402	617,7692	555,5453	484,9021
150000	3750	799,1789	761,9333	719,7344	671,7172	617,0163	554,7666	484,1030
200000	3750	798,5585	761,2778	719,0443	670,9941	616,2633	553,9879	483,3039
15	5000	859,3864	816,6467	767,9446	712,6911	650,2969	580,1730	501,7303
50000	5000	858,7662	815,9914	767,2547	711,9683	649,5441	579,3945	500,9314
100000	5000	858,1458	815,3359	766,5646	711,2452	648,7912	578,6158	500,1323
150000	5000	857,5255	814,6804	765,8745	710,5222	648,0382	577,8370	499,3333
200000	5000	856,9051	814,0249	765,1844	709,7992	647,2853	577,0583	498,5342

D Tabellen

Tabelle C.20: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungspro-
zeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	9,8480	9,88652	9,99292	9,92431	10,01747	10,00508	10,00966
50000	10	9,9297	9,90309	10,03579	9,90765	10,04043	10,02811	9,99620
100000	10	9,9845	9,98562	10,00366	10,00944	10,00622	10,00413	10,00458
150000	10	9,9903	9,97131	9,98649	10,04855	10,02220	10,01522	9,97790
200000	10	10,5350	10,61383	9,92990	10,59716	10,74389	10,34498	10,28106
15	25	24,8588	24,80523	24,99957	24,82979	24,80383	25,07411	24,87013
50000	25	24,9288	24,89675	25,03230	24,89476	24,98684	24,96385	24,98934
100000	25	24,9899	24,98956	25,00419	25,02021	25,01023	25,00158	25,00892
150000	25	25,0018	25,00072	25,01552	24,99861	25,00669	25,00228	25,00279
200000	25	24,9985	25,00021	24,98989	24,99109	25,00233	24,93475	24,99636
15	50	49,9199	49,87942	49,98325	50,00832	49,96508	50,00187	50,02611
50000	50	49,9994	50,02490	50,00759	49,94350	50,01100	50,00836	50,00413
100000	50	49,9994	49,99716	49,99943	49,99214	50,00132	49,99823	49,99812
150000	50	49,9985	49,99776	49,98949	50,00505	50,02945	50,00755	49,94818
200000	50	49,9945	49,98601	50,55777	49,99147	49,99302	50,00042	49,95581
15	100	100,0059	99,97368	99,92346	100,00409	99,99148	99,99861	99,99152
50000	100	100,0054	99,99792	99,92500	100,01008	99,99535	100,00084	100,00277
100000	100	100,0037	100,00162	99,99824	99,99885	100,00089	99,99597	99,99711
150000	100	100,0032	100,01543	99,99822	100,01940	100,01929	99,99597	100,02178
200000	100	100,0165	100,00456	100,02628	99,97047	99,97751	99,99505	99,94822
15	500	500,0028	499,99856	499,94106	499,79023	499,99749	499,95042	499,62937
50000	500	500,0061	499,99938	500,02237	500,00476	500,00894	499,72016	499,94418
100000	500	500,0072	500,00585	499,89722	500,00205	500,00139	499,99546	499,97739
150000	500	500,0119	500,00349	499,98754	499,99847	499,99884	499,99856	500,00686
200000	500	500,0141	500,13994	501,51509	500,21109	500,14737	499,96915	500,28235
15	1250	1250,0008	1249,97001	1253,97379	1250,01233	1250,06352	1250,79399	1251,17216
50000	1250	1249,9361	1249,96148	1251,60359	1249,98558	1249,78318	1250,00864	1250,33782
100000	1250	1249,8688	1249,83482	1250,74324	1249,92538	1249,83077	1249,99904	1250,08463
150000	1250	1249,5138	1249,59158	1250,89493	1249,72122	1249,09032	1249,98168	1249,89146
200000	1250	1249,4669	1249,26440	1249,98554	1249,05120	1248,56297	1249,96036	1250,00393
15	2500	2501,2143	2500,39678	2502,06149	2500,34759	2500,20417	2501,14500	2499,60922
50000	2500	2499,9380	2500,16365	2500,13993	2499,99955	2500,00286	2500,44250	2499,57853
100000	2500	2499,9689	2500,06600	2499,98923	2500,01642	2499,91184	2499,83287	2499,99594
150000	2500	2499,9068	2500,00474	2500,00717	2499,82217	2500,80680	2500,35558	2500,08711
200000	2500	2499,9673	2500,26751	2499,07222	2498,95355	2500,72683	2499,89064	2499,88861
15	3750	3750,1763	3749,94940	3749,49148	3749,92963	3749,93959	3757,98578	3752,14994
50000	3750	3749,9969	3749,99707	3750,00991	3749,91010	3750,00112	3749,51451	3750,09521
100000	3750	3749,8469	3749,53452	3749,45748	3749,64513	3750,01584	3750,15437	3751,03350
150000	3750	3749,7373	3750,32068	3750,44347	3749,84958	3749,99619	3750,19369	3748,85547
200000	3750	3748,5986	3745,72543	3745,24096	3749,75361	3745,80071	3746,77163	3747,35472
15	5000	5005,5717	5006,71391	5006,27940	5004,92075	5007,73196	4999,11298	5003,95599
50000	5000	4999,8203	5003,34049	5002,49158	5004,46641	5006,44685	5000,28845	4999,35976
100000	5000	5000,5209	5000,57045	5000,20238	5000,14126	5001,04553	4999,92615	5000,77919
150000	5000	5000,3992	4999,94908	4999,97277	4999,99425	5000,32002	5000,03195	5000,55259
200000	5000	4988,5820	4995,40628	4995,45677	4993,16050	4995,82475	4994,05353	4995,58291

Tabelle C.21: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		RSS für die Konzentrationsbestimmung - SEP=4,173						
c(CO ₂)/ppm	c(CO)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)						
		1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	0,02311	0,01288	0,00005	0,00573	0,00031	0,00003	0,00009
50000	10	0,00494	0,00939	0,00128	0,00853	0,00163	0,00079	0,00001
100000	10	0,00024	0,00021	0,00001	0,00009	0,00004	0,00002	0,00002
150000	10	0,00009	0,00082	0,00018	0,00236	0,00049	0,00023	0,00049
200000	10	0,28624	0,37679	0,00491	0,35660	0,55338	0,11901	0,07899
15	25	0,01994	0,03794	0,00000	0,02897	0,03848	0,00549	0,01687
50000	25	0,00507	0,01066	0,00104	0,01108	0,00017	0,00131	0,00011
100000	25	0,00010	0,00011	0,00002	0,00041	0,00010	0,00000	0,00008
150000	25	0,00000	0,00000	0,00024	0,00000	0,00004	0,00001	0,00001
200000	25	0,00000	0,00000	0,00010	0,00008	0,00001	0,00426	0,00001
15	50	0,00642	0,01454	0,00028	0,00007	0,00122	0,00000	0,00068
50000	50	0,00000	0,00062	0,00006	0,00319	0,00012	0,00007	0,00002
100000	50	0,00000	0,00001	0,00000	0,00006	0,00000	0,00000	0,00000
150000	50	0,00000	0,00000	0,00011	0,00003	0,00087	0,00006	0,00269
200000	50	0,00003	0,00020	0,31111	0,00007	0,00005	0,00000	0,00195
15	100	0,00004	0,00069	0,00586	0,00002	0,00007	0,00000	0,00007
50000	100	0,00003	0,00000	0,00562	0,00010	0,00002	0,00000	0,00001
100000	100	0,00001	0,00000	0,00000	0,00000	0,00000	0,00002	0,00001
150000	100	0,00001	0,00024	0,00000	0,00038	0,00037	0,00002	0,00047
200000	100	0,00027	0,00002	0,00069	0,00087	0,00051	0,00002	0,00268
15	500	0,00001	0,00000	0,00347	0,04400	0,00001	0,00246	0,13736
50000	500	0,00004	0,00000	0,00050	0,00002	0,00008	0,07831	0,00312
100000	500	0,00005	0,00003	0,01056	0,00000	0,00000	0,00002	0,00051
150000	500	0,00014	0,00001	0,00016	0,00000	0,00000	0,00000	0,00005
200000	500	0,00020	0,01958	2,29549	0,04456	0,02172	0,00095	0,07972
15	1250	0,00000	0,00090	15,79104	0,00015	0,00404	0,63042	1,37396
50000	1250	0,00408	0,00148	2,57149	0,00021	0,04701	0,00007	0,11412
100000	1250	0,01722	0,02729	0,55240	0,00557	0,02864	0,00000	0,00716
150000	1250	0,23639	0,16681	0,80090	0,07772	0,82753	0,00034	0,01178
200000	1250	0,28420	0,54111	0,00021	0,90022	2,06506	0,00157	0,00002
15	2500	1,47448	0,15743	4,24975	0,12082	0,04169	1,31103	0,15271
50000	2500	0,00385	0,02678	0,01958	0,00000	0,00001	0,19580	0,17764
100000	2500	0,00096	0,00436	0,00012	0,00027	0,00777	0,02793	0,00002
150000	2500	0,00868	0,00002	0,00005	0,03162	0,65093	0,12644	0,00759
200000	2500	0,00107	0,07156	0,86078	1,09507	0,52829	0,01196	0,01241
15	3750	0,03110	0,00256	0,25859	0,00495	0,00365	63,77270	4,62225
50000	3750	0,00001	0,00001	0,00010	0,00808	0,00000	0,23570	0,00907
100000	3750	0,02343	0,21667	0,29432	0,12594	0,00025	0,02383	1,06813
150000	3750	0,06899	0,10284	0,19667	0,02263	0,00001	0,03751	1,30994
200000	3750	1,96389	18,27198	22,64842	0,06071	17,63402	10,42235	6,99749
15	5000	31,04429	45,07665	39,43082	24,21376	59,78313	0,78681	15,64987
50000	5000	0,03229	11,15890	6,20795	19,94880	41,56189	0,08320	0,40991
100000	5000	0,27135	0,32542	0,04096	0,01995	1,09312	0,00545	0,60713
150000	5000	0,15936	0,00259	0,00074	0,00003	0,10242	0,00102	0,30536
200000	5000	130,37142	21,10231	20,64094	46,77874	17,43269	35,36050	19,51065
SEP		2,31645	1,77566	1,94445	1,74062	2,14350	1,91132	1,30351
SEA		4,38378	3,95822	3,95822	3,14714	4,38378	5,00011	4,37844
mittl.abs.Fehler		0,9787	0,8637	0,8637	0,7007	0,9787	1,1512	0,9683
mittl.rel.Fehler*		0,0196	0,0173	0,0173	0,0140	0,0196	0,0230	0,0194

*mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(CO)=5000 ppm

Regressionsanalyse für die Meßwerte von CO/CO₂ über das Phasenmodell

Tabelle C.22: Polynomische Regression für p_0 : $p_0 = a_0 + b_0f + c_0f^2 + d_0f^3 + e_0f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₀	-22,59587416	0,727592389	-31,05567689	0,001035245
b ₀	-48,13539481	3,045630543	-15,80473866	0,003979486
c ₀	61,22515152	4,704884379	13,01310438	0,00585345
d ₀	-33,9730303	3,180906968	-10,68029673	0,008653022
e ₀	7,159090909	0,794706569	9,008470788	0,012099286
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999971523	0,999914569	0,001690637	7

Tabelle C.23: ANOVA Table:Polynomische Regression für p_0 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	4	0,20073466	0,050183665	17557,45799	<0.0001
Error	2	5,72E-06	2,86E-06		
Total	6	0,200740377			

Tabelle C.24: Polynomische Regression für p_1 : $p_1 = a_1 + b_1f + c_1f^2 + d_1f^3 + e_1f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₁	-827,8778076	22,73601753	-36,412613	7,53E-04
b ₁	1815,087394	95,17074455	19,07190495	0,002737949
c ₁	-1846,876845	147,0195886	-12,56211409	0,006277262
d ₁	963,3774495	99,39790142	9,692130676	0,010478362
e ₁	-198,6390152	24,83322083	-7,998922755	0,015272091
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999999625	0,999998875	0,052829514	7

Tabelle C.25: ANOVA Table:Polynomische Regression für p_1 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _i F
Model	4	1,49E+04	3,72E+03	1,33E+06	<0.0001
Error	2	0,005581915	0,002790958		
Total	6	1,49E+04			

Tabelle C.26: Polynomische Regression für p_2 : $p_2 = a_2 + b_2 f + c_2 f^2 + d_2 f^3 + e_2 f^4$

Parameter	Value	Error	t-Value	Prob _i t
a_2	4,38E-05	2,81E-06	15,60180975	0,004083042
b_2	-1,38E-04	1,17E-05	-11,78968147	0,007117701
c_2	1,66E-04	1,81E-05	9,157185187	0,011716312
d_2	-8,98E-05	1,23E-05	-7,3196104	0,01815801
e_2	1,86E-05	3,07E-06	6,073984508	0,026050697
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999962	0,999885999	6,52E-09	7

Tabelle C.27: ANOVA Table:Polynomische Regression für p_2 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _i F
Model	4	2,24E-12	5,59E-13	13157,29051	<0.0001
Error	2	8,50E-17	4,25E-17		
Total	6	2,24E-12			

Tabelle C.28: Polynomische Regression für p_3 : $p_3 = a_3 + b_3f + c_3f^2 + d_3f^3 + e_3f^4$

Parameter	Value	Error	t-Value	Prob _t
a_3	2,72E+04	8,51E+02	31,93805037	9,79E-04
b_3	-6,40E+04	3,56E+03	-17,95834698	0,003086406
c_3	6,82E+04	5,51E+03	12,38394354	0,006457427
d_3	-3,63E+04	3,72E+03	-9,757961036	0,010339636
e_3	7,58E+03	9,30E+02	8,14649994	0,014735842
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999999394	0,999998181	1,978200184	7

Tabelle C.29: ANOVA Table: Polynomische Regression für p_3 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	4	1,29E+07	3,23E+06	824629,5187	<0.0001
Error	2	7,83E+00	3,91E+00		
Total	6	1,29E+07			

Tabelle C.30: Polynomische Regression für p_4 : $p_4 = a_4 + b_4f + c_4f^2 + d_4f^3 + e_4f^4$

Parameter	Value	Error	t-Value	Prob _t
a_4	7,79E-11	1,16E-11	6,698786963	0,02156646
b_4	-2,92E-10	4,87E-11	-5,991624929	0,026743122
c_4	4,61E-10	7,52E-11	6,127140162	0,0256178
d_4	-3,32E-10	5,08E-11	-6,530289578	0,022655725
e_4	8,37E-11	1,27E-11	6,58562185	0,022289199
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,99999481	0,99998443	2,70E-14	7

Tabelle C.31: ANOVA Table: Polynomische Regression für p_4 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _i F
Model	4	2,81E-22	7,03E-23	0,00703465	0,999807509
Error	2	1,46E-27	1,00E-20		
Total	6	2,81E-22			

Tabelle C.32: Polynomische Regression für p_5 : $p_5 = a_5 + b_5f + c_5f^2 + d_5f^3 + e_5f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₅	-9,79E-03	7,18E-04	-13,63457408	0,005336172
b ₅	3,68E-02	3,00E-03	12,24911045	0,006598959
c ₅	-4,61E-02	4,64E-03	-9,927370852	0,009994985
d ₅	2,66E-02	3,14E-03	8,469995832	0,013654227
e ₅	-5,80E-03	7,84E-04	-7,398797073	0,017781662
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999990588	0,999971763	1,67E-06	7

Tabelle C.33: ANOVA Table: Polynomische Regression für p_5

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	4	5,91E-07	1,48E-07	53121,22386	<0.0001
Error	2	5,56E-12	2,78E-12		
Total	6	5,91E-07			

Tabelle C.34: Polynomische Regression für p_6 : $p_6 = a_6 + b_6f + c_6f^2 + d_6f^3 + e_6f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₆	-9,79E-03	7,18E-04	-13,63457408	0,005336172
b ₆	3,68E-02	3,00E-03	12,24911045	0,006598959
c ₆	-4,61E-02	4,64E-03	-9,927370852	0,009994985
d ₆	2,66E-02	3,14E-03	8,469995832	0,013654227
e ₆	-5,80E-03	7,84E-04	-7,398797073	0,017781662
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999990588	0,999971763	1,67E-06	7

Tabelle C.35: ANOVA Table: Polynomische Regression für p_6 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob ₁ F
Model	4	5,91E-07	1,48E-07	53121,22386	<0.0001
Error	2	5,56E-12	2,78E-12		
Total	6	5,91E-07			

Tabelle C.36: Polynomische Regression für p_7 : $p_7 = a_7 + b_7f + c_7f^2 + d_7f^3 + e_7f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₇	-9,79E-03	7,18E-04	-13,63457408	0,005336172
b ₇	3,68E-02	3,00E-03	12,24911045	0,006598959
c ₇	-4,61E-02	4,64E-03	-9,927370852	0,009994985
d ₇	2,66E-02	3,14E-03	8,469995832	0,013654227
e ₇	-5,80E-03	7,84E-04	-7,398797073	0,017781662
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999990588	0,999971763	1,67E-06	7

Tabelle C.37: ANOVA Table:Polynomische Regression für p_7 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	4	5,91E-07	1,48E-07	53121,22386	<0.0001
Error	2	5,56E-12	2,78E-12		
Total	6	5,91E-07			

Tabelle C.38: Polynomische Regression für p_8 : $p_8 = a_8 + b_8f + c_8f^2 + d_8f^3 + e_8f^4$

Parameter	Value	Error	t-Value	Prob _t
a ₈	-9,79E-03	7,18E-04	-13,63457408	0,005336172
b ₈	3,68E-02	3,00E-03	12,24911045	0,006598959
c ₈	-4,61E-02	4,64E-03	-9,927370852	0,009994985
d ₈	2,66E-02	3,14E-03	8,469995832	0,013654227
e ₈	-5,80E-03	7,84E-04	-7,398797073	0,017781662
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999990588	0,999971763	1,67E-06	7

Tabelle C.39: ANOVA Table: Polynomische Regression für p_8 .

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob ₁ F
Model	4	5,91E-07	1,48E-07	53121,22386	<0.0001
Error	2	5,56E-12	2,78E-12		
Total	6	5,91E-07			

Tabelle C.40: Polynomische Regression für p_9 : $p_9 = a_9 + b_9f + c_9f^2 + d_9f^3 + e_9f^4$

Parameter	Value	Error	t-Value	Prob _t
a_9	-9,79E-03	7,18E-04	-13,63457408	0,005336172
b_9	3,68E-02	3,00E-03	12,24911045	0,006598959
c_9	-4,61E-02	4,64E-03	-9,927370852	0,009994985
d_9	2,66E-02	3,14E-03	8,469995832	0,013654227
e_9	-5,80E-03	7,84E-04	-7,398797073	0,017781662
	R-Square(COD)	Adj.	Root-MSE(SD)	N
	0,999990588	0,999971763	1,67E-06	7

Tabelle C.41: ANOVA Table: Polynomische Regression für p_9 : $p_9 = a_9 + b_9f + c_9f^2 + d_9f^3 + e_9f^4$.

Item	Degrees of Freedom	Sum of Squares	Mean Square	F Statistic	Prob _F
Model	4	5,91E-07	1,48E-07	53121,22386	<0.0001
Error	2	5,56E-12	2,78E-12		
Total	6	5,91E-07			

Tabelle C.42: Regression für φ : $\varphi = p_0 + \frac{p_1}{c(\text{CO})} + p_2 c(\text{CO}_2) + \frac{p_3}{c(\text{CO})^2} + p_4 c(\text{CO}_2)^2 + p_5 \frac{c(\text{CO}_2)}{c(\text{CO})} + \frac{p_6}{c(\text{CO})^3} + p_7 c(\text{CO}_2)^3 + p_8 \frac{c(\text{CO}_2)^2}{c(\text{CO})} + p_9 \frac{c(\text{CO}_2)}{c(\text{CO})^2}$.

Alter	p₀	p₁	p₂	p₃	p₄
1,3	-35,89305	-40,27870	4,53174E-07	1053,66331	-1,30928E-11
1,2	-36,05444	-56,45722	3,08149E-07	1515,37806	-8,86009E-12
1,1	-36,19885	-74,57465	2,41693E-07	2036,17753	-4,84532E-12
1,0	-36,32006	-94,92882	2,78768E-07	2624,89645	-1,36514E-12
0,9	-36,39462	-118,29429	4,89019E-07	3308,55022	1,46448E-12
0,8	-36,38192	-145,92236	9,86769E-07	4132,33482	3,72837E-12
0,7	-36,22418	-179,54105	1,93103E-06	5159,62691	5,71211E-12
Alter	p₅	p₆	p₇	p₈	p₉
1,3	0,00201	-6654,83280	6,97994E-17	-1,99394E-09	-0,00174
1,2	0,00193	-9826,82803	5,14130E-17	-1,66343E-09	-0,00106
1,1	0,00183	-13419,41204	3,23032E-17	-1,25738E-09	-0,00020
1,0	0,00172	-17492,87741	1,34609E-17	-7,72184E-10	0,00085
0,9	0,00158	-22253,84423	-6,15220E-18	-1,32556E-10	0,00227
0,8	0,00140	-28055,26007	-2,96031E-17	8,08519E-10	0,00440
0,7	0,00112	-35396,40001	-6,19879E-17	2,26977E-09	0,00778

Kalibrationsergebnisse der Regressionsanalyse für die CO₂ - Bestimmung über das Phasenmodell

Tabelle C.43: Datensatz Phase Mischung CO/CO₂ - beim Alterungsprozeß 7.3

Reingase CO ₂ / CO Hz		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	-36,15	-36,4544	-36,7625	-37,0668	-37,354	-37,6021	-37,7704
50000	10	-27,207	-27,5936	-27,9405	-28,221	-28,3904	-28,3706	-28,0125
100000	10	-19,6131	-19,8009	-19,875	-19,7704	-19,3774	-18,4932	-16,7118
150000	10	-12,9195	-12,7445	-12,3466	-11,6018	-10,2982	-8,021	-3,929
200000	10	-7,1509	-6,5373	-5,5662	-4,041	-1,6207	2,3489	9,2004
15	25	-36,1556	-36,4589	-36,7659	-37,0689	-37,3546	-37,6007	-37,7672
50000	25	-32,6222	-32,9842	-33,3361	-33,6648	-33,9484	-34,1484	-34,1954
100000	25	-29,4771	-29,8381	-30,1726	-30,4607	-30,6669	-30,7307	-30,5397
150000	25	-26,4665	-26,7892	-27,0644	-27,2619	-27,3291	-27,174	-26,6211
200000	25	-23,5914	-23,8431	-24,0222	-24,0833	-23,9525	-23,4945	-22,4472
15	50	-36,1592	-36,4609	-36,7662	-37,0672	-37,3507	-37,5943	-37,7576
50000	50	-34,3907	-34,7256	-35,0578	-35,3769	-35,6656	-35,8944	-36,01
100000	50	-32,8026	-33,1503	-33,4887	-33,8048	-34,0764	-34,2657	-34,3036
150000	50	-31,2567	-31,6067	-31,9402	-32,2403	-32,4803	-32,6109	-32,5445
200000	50	-29,7482	-30,0912	-30,4092	-30,6816	-30,8742	-30,927	-30,7288
15	100	-36,164	-36,4627	-36,7646	-37,0618	-37,341	-37,5794	-37,7364
50000	100	-35,2686	-35,585	-35,9013	-36,2087	-36,4918	-36,7246	-36,8597
100000	100	-34,4623	-34,7883	-35,1112	-35,4211	-35,7003	-35,9193	-36,0239
150000	100	-33,6727	-34,0052	-34,3317	-34,6406	-34,912	-35,1125	-35,1803
200000	100	-32,8961	-33,2325	-33,5597	-33,8644	-34,1243	-34,3016	-34,3261
15	500	-36,186	-36,4611	-36,7367	-37,0042	-37,2493	-37,4471	-37,5534
50000	500	-35,9838	-36,2626	-36,5413	-36,8108	-37,0562	-37,2525	-37,3531
100000	500	-35,8015	-36,0826	-36,3631	-36,6335	-36,8782	-37,0718	-37,166
150000	500	-35,6223	-35,9054	-36,1875	-36,4583	-36,7023	-36,8929	-36,9804
200000	500	-35,4452	-35,7303	-36,0136	-36,2848	-36,5278	-36,7151	-36,7956
15	1250	-36,1786	-36,4119	-36,6406	-36,8547	-37,0374	-37,1601	-37,1709
50000	1250	-36,0787	-36,3135	-36,5433	-36,7579	-36,9403	-37,0613	-37,0683
100000	1250	-35,9885	-36,2242	-36,4544	-36,669	-36,8507	-36,9698	-36,9728
150000	1250	-35,8999	-36,1364	-36,3671	-36,5815	-36,7624	-36,8795	-36,8784
200000	1250	-35,8124	-36,0496	-36,2807	-36,495	-36,6749	-36,7899	-36,7846
15	2500	-36,0546	-36,2249	-36,3821	-36,5135	-36,598	-36,5993	-36,4506
50000	2500	-35,9873	-36,1579	-36,3153	-36,4466	-36,5302	-36,5295	-36,3772
100000	2500	-35,9264	-36,0974	-36,2547	-36,3855	-36,4682	-36,4656	-36,3094
150000	2500	-35,8666	-36,0377	-36,195	-36,3253	-36,4068	-36,4021	-36,2422
200000	2500	-35,8075	-35,9789	-36,1359	-36,2656	-36,346	-36,3393	-36,1754
15	3750	-35,8325	-35,9471	-36,0403	-36,0966	-36,0899	-35,9753	-35,6688
50000	3750	-35,7748	-35,8894	-35,9827	-36,0382	-36,0301	-35,9132	-35,6025
100000	3750	-35,7228	-35,8374	-35,9303	-35,985	-35,9757	-35,8565	-35,5416
150000	3750	-35,6716	-35,7861	-35,8786	-35,9326	-35,9218	-35,8002	-35,4811
200000	3750	-35,6211	-35,7354	-35,8275	-35,8807	-35,8685	-35,7444	-35,4211
15	5000	-35,549	-35,6141	-35,6498	-35,6375	-35,5461	-35,3212	-34,8602
50000	5000	-35,4955	-35,5603	-35,5958	-35,5827	-35,4893	-35,2617	-34,7958
100000	5000	-35,4473	-35,5119	-35,5468	-35,5327	-35,4377	-35,2075	-34,7367
150000	5000	-35,3999	-35,4642	-35,4985	-35,4834	-35,3867	-35,1536	-34,6781
200000	5000	-35,3531	-35,417	-35,4507	-35,4345	-35,3361	-35,1002	-34,6201

Tabelle C.44: validierte Phase Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz

$$\varphi = p_0 + \frac{p_1}{c(\text{CO})} + p_2 c(\text{CO}_2) + \frac{p_3}{c(\text{CO})^2} + p_4 c(\text{CO}_2)^2 + p_5 \frac{c(\text{CO}_2)}{c(\text{CO})} + \frac{p_6}{c(\text{CO})^3} + p_7 c(\text{CO}_2)^3 + p_8 \frac{c(\text{CO}_2)^2}{c(\text{CO})} + p_9 \frac{c(\text{CO}_2)}{c(\text{CO})^2}.$$

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	-36,036	-36,370	-36,711	-37,054	-37,390	-37,703	-37,976
50000	10	-27,339	-27,687	-27,985	-28,221	-28,343	-28,253	-27,809
100000	10	-19,649	-19,839	-19,884	-19,768	-19,358	-18,399	-16,523
150000	10	-12,917	-12,789	-12,388	-11,688	-10,440	-8,167	-4,166
200000	10	-7,090	-6,500	-5,472	-3,971	-1,595	2,422	9,215
15	25	-36,243	-36,516	-36,782	-37,036	-37,256	-37,402	-37,415
50000	25	-32,556	-32,916	-33,265	-33,598	-33,893	-34,117	-34,220
100000	25	-29,280	-29,653	-29,999	-30,310	-30,553	-30,672	-30,588
150000	25	-26,364	-26,690	-26,960	-27,163	-27,242	-27,092	-26,566
200000	25	-23,754	-23,988	-24,124	-24,148	-23,963	-23,398	-22,202
15	50	-36,330	-36,655	-36,983	-37,308	-37,615	-37,871	-38,034
50000	50	-34,452	-34,834	-35,219	-35,600	-35,965	-36,289	-36,540
100000	50	-32,787	-33,185	-33,580	-33,966	-34,325	-34,630	-34,838
150000	50	-31,281	-31,669	-32,042	-32,395	-32,701	-32,915	-32,972
200000	50	-29,883	-30,247	-30,582	-30,878	-31,096	-31,167	-30,990
15	100	-36,197	-36,477	-36,754	-37,024	-37,269	-37,456	-37,539
50000	100	-35,250	-35,561	-35,869	-36,168	-36,442	-36,659	-36,779
100000	100	-34,416	-34,734	-35,047	-35,348	-35,618	-35,826	-35,924
150000	100	-33,642	-33,957	-34,263	-34,552	-34,803	-34,977	-35,020
200000	100	-32,876	-33,192	-33,493	-33,772	-34,001	-34,137	-34,113
15	500	-35,969	-36,161	-36,340	-36,499	-36,618	-36,657	-36,563
50000	500	-35,780	-35,978	-36,160	-36,319	-36,433	-36,458	-36,335
100000	500	-35,623	-35,816	-35,992	-36,143	-36,246	-36,253	-36,102
150000	500	-35,447	-35,639	-35,812	-35,962	-36,062	-36,067	-35,911
200000	500	-35,199	-35,406	-35,597	-35,765	-35,886	-35,920	-35,808
15	1250	-35,925	-36,099	-36,257	-36,394	-36,487	-36,496	-36,364
50000	1250	-35,849	-36,025	-36,183	-36,315	-36,397	-36,383	-36,212
100000	1250	-35,795	-35,964	-36,113	-36,235	-36,304	-36,271	-36,068
150000	1250	-35,710	-35,877	-36,024	-36,145	-36,214	-36,181	-35,979
200000	1250	-35,541	-35,725	-35,892	-36,035	-36,130	-36,136	-35,993
15	2500	-35,909	-36,077	-36,228	-36,358	-36,441	-36,440	-36,295
50000	2500	-35,872	-36,040	-36,189	-36,312	-36,382	-36,356	-36,167
100000	2500	-35,852	-36,013	-36,152	-36,264	-36,321	-36,274	-36,053
150000	2500	-35,797	-35,956	-36,094	-36,205	-36,262	-36,216	-35,998
200000	2500	-35,655	-35,831	-35,989	-36,124	-36,210	-36,205	-36,050
15	3750	-35,904	-36,069	-36,219	-36,345	-36,426	-36,421	-36,272
50000	3750	-35,880	-36,045	-36,191	-36,311	-36,378	-36,346	-36,152
100000	3750	-35,871	-36,029	-36,165	-36,274	-36,327	-36,275	-36,047
150000	3750	-35,826	-35,982	-36,117	-36,225	-36,278	-36,228	-36,004
200000	3750	-35,692	-35,866	-36,022	-36,153	-36,236	-36,228	-36,069
15	5000	-35,901	-36,066	-36,214	-36,339	-36,418	-36,411	-36,260
50000	5000	-35,883	-36,048	-36,192	-36,310	-36,375	-36,342	-36,144
100000	5000	-35,881	-36,037	-36,172	-36,278	-36,329	-36,275	-36,045
150000	5000	-35,841	-35,995	-36,128	-36,234	-36,286	-36,233	-36,007
200000	5000	-35,711	-35,883	-36,038	-36,168	-36,249	-36,239	-36,078

D Tabellen

Tabelle C.45: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)				
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23
15	10	26,56277	26,52278	26,78835	26,03224	25,90106
50000	10	50386,02229	50328,14648	50335,33198	50326,11075	50296,59094
100000	10	100170,82042	100120,33772	100208,95328	100280,95962	100315,77409
150000	10	151013,85102	150964,58922	151147,33630	151319,22493	151465,10652
200000	10	202585,74921	202548,80648	202845,73195	203177,80923	203531,12187
15	25	27,20325	27,39093	27,48139	26,32227	25,97979
50000	25	50280,14029	50221,39271	50230,79711	50224,75444	50192,28416
100000	25	99669,11335	99611,55535	99693,98187	99744,77907	99748,06359
150000	25	149781,12511	149685,34644	149808,11398	149889,99522	149898,46841
200000	25	200380,02753	200223,97169	200353,10222	200446,61802	200442,11470
15	50	28,89322	28,15081	27,23963	28,21144	26,82710
50000	50	50252,60469	50195,20858	50203,18569	50199,00748	50167,92984
100000	50	99554,05707	99495,00658	99575,65854	99629,23736	99628,05788
150000	50	149496,93969	149401,05869	149513,85025	149597,73091	149578,68255
200000	50	199820,19313	199653,79691	199775,57327	199852,83825	199810,63192
15	100	28,40557	29,63224	26,76321	27,70768	24,20527
50000	100	50251,30751	50189,39050	50199,87847	50193,78780	50159,35952
100000	100	99517,01380	99451,28278	99534,05803	99582,38037	99581,02942
150000	100	149393,90568	149293,99661	149402,78108	149472,55450	149464,58516
200000	100	199617,45014	199449,65744	199559,37926	199623,96023	199577,59588
15	500	31,59772	32,86469	34,08655	16,89207	17,31766
50000	500	50312,56292	50246,56240	50216,46248	50169,34286	50186,80428
100000	500	99586,32696	99520,53835	99522,50142	99490,05624	99559,69887
150000	500	149461,48654	149367,78139	149349,82232	149362,70901	149369,00474
200000	500	199666,53526	199462,52663	199454,42715	199426,24424	199362,49656
15	1250	37,93932	33,17207	34,23091	33,31436	35,65900
50000	1250	50395,61189	50284,72315	50248,32710	50164,21238	50152,97628
100000	1250	99808,35124	99638,98285	99700,95464	99639,62478	99588,79589
150000	1250	149758,64783	149494,11248	149511,03466	149503,57092	149382,55158
200000	1250	199971,84847	199603,16278	199569,29147	199493,75950	199353,92402
15	2500	48,77537	47,62925	44,03503	43,51077	38,83323
50000	2500	50384,98092	50438,49150	50478,29392	50383,32369	50362,42054
100000	2500	99867,79478	99741,47833	99855,70509	99808,86563	99625,47887
150000	2500	149862,94693	149719,12259	149748,10885	149676,82746	149500,78945
200000	2500	200147,06724	199759,20639	199901,18369	199836,54758	199532,99792
15	3750	55,34622	57,16641	59,86378	50,74258	60,11878
50000	3750	50444,16650	50555,15713	50460,68637	50583,08770	50779,93869
100000	3750	99851,43619	99871,54702	99874,49461	100077,26339	100109,16730
150000	3750	149901,42028	149848,00666	149882,06863	149999,54410	150075,92812
200000	3750	200133,15337	200051,17990	200067,34138	200151,78015	200128,57101
15	5000	62,50328	62,16049	67,20628	56,49137	67,45293
50000	5000	50576,79539	50680,40170	50547,76809	50529,19242	50936,17826
100000	5000	100002,42817	100028,63907	100005,48662	100049,73850	100431,35854
150000	5000	150003,71934	149982,55924	150007,73283	150055,75780	150445,47294
200000	5000	200229,00024	200223,23499	200252,92081	200360,19352	200713,50858

Tabelle C.46: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor	
c(CO ₂)/ppm	c(CO)/ppm	0,8 13,54	0,7 11,85
15	10	24,17219	24,24796
50000	10	50294,55148	50300,56533
100000	10	100415,33941	100551,30228
150000	10	151766,40194	152228,25270
200000	10	204159,40352	205113,26855
15	25	26,47998	25,43782
50000	25	50188,30223	50185,51136
100000	25	99793,31980	99822,58009
150000	25	149959,79229	149993,64784
200000	25	200510,36808	200558,46486
15	50	27,33281	25,18877
50000	50	50166,67646	50157,81160
100000	50	99667,87974	99687,52765
150000	50	149620,64434	149618,24833
200000	50	199821,07485	199760,28124
15	100	28,99071	24,69847
50000	100	50149,14991	50142,91395
100000	100	99613,78151	99633,87508
150000	100	149492,44315	149485,76404
200000	100	199570,99348	199508,17872
15	500	17,57539	17,52617
50000	500	50101,18111	50133,98083
100000	500	99491,08865	99552,91079
150000	500	149278,19192	149310,19892
200000	500	199231,54165	199196,36432
15	1250	35,81566	35,27149
50000	1250	50174,22889	50180,77059
100000	1250	99576,53377	99585,43209
150000	1250	149304,05532	149275,13416
200000	1250	199197,24009	199108,71420
15	2500	41,98884	44,30310
50000	2500	50394,21671	50294,33454
100000	2500	99520,11641	99521,86608
150000	2500	149333,95606	149205,22854
200000	2500	199174,09435	199088,71091
15	3750	56,76009	56,96367
50000	3750	50656,31298	50680,00971
100000	3750	99912,85418	100015,45097
150000	3750	149824,72022	149928,84802
200000	3750	199871,84658	199936,33142
15	5000	61,95628	62,86190
50000	5000	51004,23193	51075,18539
100000	5000	100401,03161	100753,09425
150000	5000	150532,07057	150921,32822
200000	5000	200779,84003	201084,21648

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Tabelle C.47: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		RSS für die Konzentrationsbestimmung - SEP=17310,91155				
c(CO ₂)/ppm	c(CO)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe				
		1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23
15	10	133,6977	132,7744	138,9651	121,7103	118,8331
50000	10	149013,2113	107680,1141	112447,5342	106348,2239	87966,1857
100000	10	29179,6175	14481,1658	43661,4743	78938,3092	99713,2787
150000	10	1027893,8936	930432,3697	1316380,5943	1740354,4254	2146537,1035
200000	10	6686098,9924	6496414,4644	8098190,3451	10098471,4809	12468821,6628
15	25	148,9193	153,5352	155,7852	128,1937	120,5558
50000	25	78478,5812	49014,7327	53267,3054	50514,5579	36973,1976
100000	25	109485,9763	150889,2495	93647,0930	65137,7253	63471,9565
150000	25	47906,2186	99006,8656	36820,2430	12101,0527	10308,6629
200000	25	144420,9232	50163,3172	124681,1752	199467,6592	195465,4088
15	50	193,0215	172,9437	149,8086	174,5420	139,8804
50000	50	63809,1296	38106,3888	41284,4238	39603,9784	28200,4305
100000	50	198865,0980	255018,3515	180065,6735	137464,9351	138340,9432
150000	50	253069,6722	358730,6887	236341,5797	161820,4182	177508,3904
200000	50	32330,5100	119856,5764	50367,3580	21656,5799	35860,2704
15	100	179,7092	214,1025	138,3730	161,4852	84,7370
50000	100	63155,4631	35868,7613	39951,4019	37553,7105	25395,4572
100000	100	233275,6681	301090,5881	217101,9165	174406,1573	175536,3484
150000	100	367350,3233	498440,7867	356670,4433	278198,7540	286669,0518
200000	100	146344,3965	302876,9320	194146,6365	141405,9087	178425,2429
15	500	275,4844	319,1471	364,2964	3,5799	5,3715
50000	500	97695,5767	60793,0187	46856,0060	28677,0028	34895,8373
100000	500	171125,3863	229883,4737	228004,8923	260042,6403	193865,0860
150000	500	289996,7440	399700,3657	422731,0137	406139,8078	398155,0125
200000	500	111198,7328	288877,6233	297649,7398	329195,6716	406410,6358
15	1250	526,2122	330,2242	369,8279	335,4159	426,7942
50000	1250	156508,7702	81067,2749	61666,3488	26965,7063	23401,7410
100000	1250	36729,2486	130333,3842	89428,1251	129870,2988	169088,8174
150000	1250	58250,8709	255922,1874	239087,1049	246441,8339	381242,5455
200000	1250	792,5085	157479,7773	185509,8355	256279,4422	417414,1782
15	2500	1140,7753	1064,6677	843,0331	812,8641	568,0227
50000	2500	148210,3057	192274,7938	228765,0758	146937,0550	131348,6457
100000	2500	17478,2194	66833,4552	20821,0222	36532,3485	140266,0786
150000	2500	18783,5449	78892,1179	63449,1501	104440,4932	249211,1748
200000	2500	21628,7727	57981,5606	9764,6639	26716,6939	218090,9470
15	3750	1627,8174	1778,0062	2012,7586	1277,5323	2035,7047
50000	3750	197283,8774	308199,4434	212231,9277	339991,2639	608304,3631
100000	3750	22071,2052	16500,1673	15751,6040	5969,6307	11917,4984
150000	3750	9717,9615	23101,9741	13907,8087	0,2078	5765,0797
200000	3750	17729,8195	2619,3820	4534,8611	23037,2132	16530,5056
15	5000	2256,5618	2224,1114	2725,4954	1721,5339	2751,3093
50000	5000	332692,9196	462946,4723	300049,8820	280044,6213	876429,7320
100000	5000	5,8960	820,1962	30,1030	2473,9185	186070,1904
150000	5000	13,8335	304,1801	59,7967	3108,9327	198446,1402
200000	5000	52441,1081	49833,8589	63968,9352	129739,3721	509094,4897
SEP		9497,5099	10526,9929	11171,8631	13735,7577	17817,9357
SEA		9492,1930	11092,0351	11293,8139	15542,4736	18749,5678
mittl.abs.Fehler		4725,3438	5654,8370	5521,7357	6446,7428	8837,4465
mittl.rel.Fehler*		2,3627	2,8274	2,7609	3,2234	4,4187

* mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(CO₂)=200000 ppm

Tabelle C.48: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungspro-
zeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor	
c(CO ₂)/ppm	c(CO)/ppm	0,8 13,54	0,7 11,85
15	10	84,1291	85,5248
50000	10	86760,5717	90339,5201
100000	10	172506,8274	303934,2065
150000	10	3120175,8214	4965110,0781
200000	10	17300637,6384	26145515,2997
15	25	131,7899	108,9481
50000	25	35457,7314	34414,4659
100000	25	42716,7041	31477,8237
150000	25	1616,6601	40,3499
200000	25	260475,5768	311883,0048
15	50	152,0981	103,8111
50000	50	27781,0418	24904,5011
100000	50	110303,8653	97638,9703
150000	50	143910,7168	145734,3392
200000	50	32014,2078	57465,0848
15	100	195,7399	94,0603
50000	100	22245,6967	20424,3967
100000	100	149164,7246	134047,4581
150000	100	257613,9574	264438,6238
200000	100	184046,5901	241888,1758
15	500	6,6326	6,3815
50000	500	10237,6180	17950,8637
100000	500	258990,7601	199888,7615
150000	500	521006,9106	475825,5249
200000	500	590528,2304	645830,3044
15	1250	433,2917	410,9332
50000	1250	30355,7058	32678,0068
100000	1250	179323,6507	171866,5500
150000	1250	484338,9920	525430,4917
200000	1250	644423,4741	794390,3735
15	2500	728,3975	858,6717
50000	2500	155406,8123	86632,8193
100000	2500	230288,2562	228612,0456
150000	2500	443614,5314	631661,6717
200000	2500	682120,1378	830447,8127
15	3750	1743,9048	1760,9500
50000	3750	430746,7342	462413,2091
100000	3750	7594,3933	238,7325
150000	3750	30723,0025	5062,6048
200000	3750	16423,3003	4053,6885
15	5000	2204,8926	2290,7616
50000	5000	1008481,7679	1156023,6262
100000	5000	160826,3502	567150,9462
150000	5000	283099,0956	848845,6884
200000	5000	608150,4798	1175525,3654
SEP		23957,1546	34469,1670
SEA		25551,7466	40506,6351
mittl.abs.Fehler		11404,9562	15406,7886
mittl.rel.Fehler*		5,7025	7,7034

* mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(CO₂)=200000 ppm

Kalibrationsergebnisse für die CO₂ über das SQ Modell

Tabelle C.49: Datensatz Phase Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	-36,15	-36,4544	-36,7625	-37,0668	-37,354	-37,6021	-37,7704
50000	10	-27,207	-27,5936	-27,9405	-28,221	-28,3904	-28,3706	-28,0125
100000	10	-19,6131	-19,8009	-19,875	-19,7704	-19,3774	-18,4932	-16,7118
150000	10	-12,9195	-12,7445	-12,3466	-11,6018	-10,2982	-8,021	-3,929
200000	10	-7,1509	-6,5373	-5,5662	-4,041	-1,6207	2,3489	9,2004
15	25	-36,1556	-36,4589	-36,7659	-37,0689	-37,3546	-37,6007	-37,7672
50000	25	-32,6222	-32,9842	-33,3361	-33,6648	-33,9484	-34,1484	-34,1954
100000	25	-29,4771	-29,8381	-30,1726	-30,4607	-30,6669	-30,7307	-30,5397
150000	25	-26,4665	-26,7892	-27,0644	-27,2619	-27,3291	-27,174	-26,6211
200000	25	-23,5914	-23,8431	-24,0222	-24,0833	-23,9525	-23,4945	-22,4472
15	50	-36,1592	-36,4609	-36,7662	-37,0672	-37,3507	-37,5943	-37,7576
50000	50	-34,3907	-34,7256	-35,0578	-35,3769	-35,6656	-35,8944	-36,01
100000	50	-32,8026	-33,1503	-33,4887	-33,8048	-34,0764	-34,2657	-34,3036
150000	50	-31,2567	-31,6067	-31,9402	-32,2403	-32,4803	-32,6109	-32,5445
200000	50	-29,7482	-30,0912	-30,4092	-30,6816	-30,8742	-30,927	-30,7288
15	100	-36,164	-36,4627	-36,7646	-37,0618	-37,341	-37,5794	-37,7364
50000	100	-35,2686	-35,585	-35,9013	-36,2087	-36,4918	-36,7246	-36,8597
100000	100	-34,4623	-34,7883	-35,1112	-35,4211	-35,7003	-35,9193	-36,0239
150000	100	-33,6727	-34,0052	-34,3317	-34,6406	-34,912	-35,1125	-35,1803
200000	100	-32,8961	-33,2325	-33,5597	-33,8644	-34,1243	-34,3016	-34,3261
15	500	-36,186	-36,4611	-36,7367	-37,0042	-37,2493	-37,4471	-37,5534
50000	500	-35,9838	-36,2626	-36,5413	-36,8108	-37,0562	-37,2525	-37,3531
100000	500	-35,8015	-36,0826	-36,3631	-36,6335	-36,8782	-37,0718	-37,166
150000	500	-35,6223	-35,9054	-36,1875	-36,4583	-36,7023	-36,8929	-36,9804
200000	500	-35,4452	-35,7303	-36,0136	-36,2848	-36,5278	-36,7151	-36,7956
15	1250	-36,1786	-36,4119	-36,6406	-36,8547	-37,0374	-37,1601	-37,1709
50000	1250	-36,0787	-36,3135	-36,5433	-36,7579	-36,9403	-37,0613	-37,0683
100000	1250	-35,9885	-36,2242	-36,4544	-36,669	-36,8507	-36,9698	-36,9728
150000	1250	-35,8999	-36,1364	-36,3671	-36,5815	-36,7624	-36,8795	-36,8784
200000	1250	-35,8124	-36,0496	-36,2807	-36,495	-36,6749	-36,7899	-36,7846
15	2500	-36,0546	-36,2249	-36,3821	-36,5135	-36,598	-36,5993	-36,4506
50000	2500	-35,9873	-36,1579	-36,3153	-36,4466	-36,5302	-36,5295	-36,3772
100000	2500	-35,9264	-36,0974	-36,2547	-36,3855	-36,4682	-36,4656	-36,3094
150000	2500	-35,8666	-36,0377	-36,195	-36,3253	-36,4068	-36,4021	-36,2422
200000	2500	-35,8075	-35,9789	-36,1359	-36,2656	-36,346	-36,3393	-36,1754
15	3750	-35,8325	-35,9471	-36,0403	-36,0966	-36,0899	-35,9753	-35,6688
50000	3750	-35,7748	-35,8894	-35,9827	-36,0382	-36,0301	-35,9132	-35,6025
100000	3750	-35,7228	-35,8374	-35,9303	-35,985	-35,9757	-35,8565	-35,5416
150000	3750	-35,6716	-35,7861	-35,8786	-35,9326	-35,9218	-35,8002	-35,4811
200000	3750	-35,6211	-35,7354	-35,8275	-35,8807	-35,8685	-35,7444	-35,4211
15	5000	-35,549	-35,6141	-35,6498	-35,6375	-35,5461	-35,3212	-34,8602
50000	5000	-35,4955	-35,5603	-35,5958	-35,5827	-35,4893	-35,2617	-34,7958
100000	5000	-35,4473	-35,5119	-35,5468	-35,5327	-35,4377	-35,2075	-34,7367
150000	5000	-35,3999	-35,4642	-35,4985	-35,4834	-35,3867	-35,1536	-34,6781
200000	5000	-35,3531	-35,417	-35,4507	-35,4345	-35,3361	-35,1002	-34,6201

Tabelle C.50: validierte Phase Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz

$$\varphi = p_0 + \frac{p_1}{c(\text{CO})} + p_2 c(\text{CO}_2) + \frac{p_3}{c(\text{CO})^2} + p_4 c(\text{CO}_2)^2 + p_5 \frac{c(\text{CO}_2)}{c(\text{CO})} + \frac{p_6}{c(\text{CO})^3} + p_7 c(\text{CO}_2)^3 + p_8 \frac{c(\text{CO}_2)^2}{c(\text{CO})} + p_9 \frac{c(\text{CO}_2)}{c(\text{CO})^2}.$$

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe						
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23	0,8 13,54	0,7 11,85
15	10	-36,036	-36,370	-36,711	-37,054	-37,390	-37,703	-37,976
50000	10	-27,339	-27,687	-27,985	-28,221	-28,343	-28,253	-27,809
100000	10	-19,649	-19,839	-19,884	-19,768	-19,358	-18,399	-16,523
150000	10	-12,917	-12,789	-12,388	-11,688	-10,440	-8,167	-4,166
200000	10	-7,090	-6,500	-5,472	-3,971	-1,595	2,422	9,215
15	25	-36,243	-36,516	-36,782	-37,036	-37,256	-37,402	-37,415
50000	25	-32,556	-32,916	-33,265	-33,598	-33,893	-34,117	-34,220
100000	25	-29,280	-29,653	-29,999	-30,310	-30,553	-30,672	-30,588
150000	25	-26,364	-26,690	-26,960	-27,163	-27,242	-27,092	-26,566
200000	25	-23,754	-23,988	-24,124	-24,148	-23,963	-23,398	-22,202
15	50	-36,330	-36,655	-36,983	-37,308	-37,615	-37,871	-38,034
50000	50	-34,452	-34,834	-35,219	-35,600	-35,965	-36,289	-36,540
100000	50	-32,787	-33,185	-33,580	-33,966	-34,325	-34,630	-34,838
150000	50	-31,281	-31,669	-32,042	-32,395	-32,701	-32,915	-32,972
200000	50	-29,883	-30,247	-30,582	-30,878	-31,096	-31,167	-30,990
15	100	-36,197	-36,477	-36,754	-37,024	-37,269	-37,456	-37,539
50000	100	-35,250	-35,561	-35,869	-36,168	-36,442	-36,659	-36,779
100000	100	-34,416	-34,734	-35,047	-35,348	-35,618	-35,826	-35,924
150000	100	-33,642	-33,957	-34,263	-34,552	-34,803	-34,977	-35,020
200000	100	-32,876	-33,192	-33,493	-33,772	-34,001	-34,137	-34,113
15	500	-35,969	-36,161	-36,340	-36,499	-36,618	-36,657	-36,563
50000	500	-35,780	-35,978	-36,160	-36,319	-36,433	-36,458	-36,335
100000	500	-35,623	-35,816	-35,992	-36,143	-36,246	-36,253	-36,102
150000	500	-35,447	-35,639	-35,812	-35,962	-36,062	-36,067	-35,911
200000	500	-35,199	-35,406	-35,597	-35,765	-35,886	-35,920	-35,808
15	1250	-35,925	-36,099	-36,257	-36,394	-36,487	-36,496	-36,364
50000	1250	-35,849	-36,025	-36,183	-36,315	-36,397	-36,383	-36,212
100000	1250	-35,795	-35,964	-36,113	-36,235	-36,304	-36,271	-36,068
150000	1250	-35,710	-35,877	-36,024	-36,145	-36,214	-36,181	-35,979
200000	1250	-35,541	-35,725	-35,892	-36,035	-36,130	-36,136	-35,993
15	2500	-35,909	-36,077	-36,228	-36,358	-36,441	-36,440	-36,295
50000	2500	-35,872	-36,040	-36,189	-36,312	-36,382	-36,356	-36,167
100000	2500	-35,852	-36,013	-36,152	-36,264	-36,321	-36,274	-36,053
150000	2500	-35,797	-35,956	-36,094	-36,205	-36,262	-36,216	-35,998
200000	2500	-35,655	-35,831	-35,989	-36,124	-36,210	-36,205	-36,050
15	3750	-35,904	-36,069	-36,219	-36,345	-36,426	-36,421	-36,272
50000	3750	-35,880	-36,045	-36,191	-36,311	-36,378	-36,346	-36,152
100000	3750	-35,871	-36,029	-36,165	-36,274	-36,327	-36,275	-36,047
150000	3750	-35,826	-35,982	-36,117	-36,225	-36,278	-36,228	-36,004
200000	3750	-35,692	-35,866	-36,022	-36,153	-36,236	-36,228	-36,069
15	5000	-35,901	-36,066	-36,214	-36,339	-36,418	-36,411	-36,260
50000	5000	-35,883	-36,048	-36,192	-36,310	-36,375	-36,342	-36,144
100000	5000	-35,881	-36,037	-36,172	-36,278	-36,329	-36,275	-36,045
150000	5000	-35,841	-35,995	-36,128	-36,234	-36,286	-36,233	-36,007
200000	5000	-35,711	-35,883	-36,038	-36,168	-36,249	-36,239	-36,078

D Tabellen

Tabelle C.51: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor (als Faktor und Vol.% - Angabe)				
c(CO ₂)/ppm	c(CO)/ppm	1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23
15	10	26,56277	26,52278	26,78835	26,03224	25,90106
50000	10	50386,02229	50328,14648	50335,33198	50326,11075	50296,59094
100000	10	100170,82042	100120,33772	100208,95328	100280,95962	100315,77409
150000	10	151013,85102	150964,58922	151147,33630	151319,22493	151465,10652
200000	10	202585,74921	202548,80648	202845,73195	203177,80923	203531,12187
15	25	27,20325	27,39093	27,48139	26,32227	25,97979
50000	25	50280,14029	50221,39271	50230,79711	50224,75444	50192,28416
100000	25	99669,11335	99611,55535	99693,98187	99744,77907	99748,06359
150000	25	149781,12511	149685,34644	149808,11398	149889,99522	149898,46841
200000	25	200380,02753	200223,97169	200353,10222	200446,61802	200442,11470
15	50	28,89322	28,15081	27,23963	28,21144	26,82710
50000	50	50252,60469	50195,20858	50203,18569	50199,00748	50167,92984
100000	50	99554,05707	99495,00658	99575,65854	99629,23736	99628,05788
150000	50	149496,93969	149401,05869	149513,85025	149597,73091	149578,68255
200000	50	199820,19313	199653,79691	199775,57327	199852,83825	199810,63192
15	100	28,40557	29,63224	26,76321	27,70768	24,20527
50000	100	50251,30751	50189,39050	50199,87847	50193,78780	50159,35952
100000	100	99517,01380	99451,28278	99534,05803	99582,38037	99581,02942
150000	100	149393,90568	149293,99661	149402,78108	149472,55450	149464,58516
200000	100	199617,45014	199449,65744	199559,37926	199623,96023	199577,59588
15	500	31,59772	32,86469	34,08655	16,89207	17,31766
50000	500	50312,56292	50246,56240	50216,46248	50169,34286	50186,80428
100000	500	99586,32696	99520,53835	99522,50142	99490,05624	99559,69887
150000	500	149461,48654	149367,78139	149349,82232	149362,70901	149369,00474
200000	500	199666,53526	199462,52663	199454,42715	199426,24424	199362,49656
15	1250	37,93932	33,17207	34,23091	33,31436	35,65900
50000	1250	50395,61189	50284,72315	50248,32710	50164,21238	50152,97628
100000	1250	99808,35124	99638,98285	99700,95464	99639,62478	99588,79589
150000	1250	149758,64783	149494,11248	149511,03466	149503,57092	149382,55158
200000	1250	199971,84847	199603,16278	199569,29147	199493,75950	199353,92402
15	2500	48,77537	47,62925	44,03503	43,51077	38,83323
50000	2500	50384,98092	50438,49150	50478,29392	50383,32369	50362,42054
100000	2500	99867,79478	99741,47833	99855,70509	99808,86563	99625,47887
150000	2500	149862,94693	149719,12259	149748,10885	149676,82746	149500,78945
200000	2500	200147,06724	199759,20639	199901,18369	199836,54758	199532,99792
15	3750	55,34622	57,16641	59,86378	50,74258	60,11878
50000	3750	50444,16650	50555,15713	50460,68637	50583,08770	50779,93869
100000	3750	99851,43619	99871,54702	99874,49461	100077,26339	100109,16730
150000	3750	149901,42028	149848,00666	149882,06863	149999,54410	150075,92812
200000	3750	200133,15337	200051,17990	200067,34138	200151,78015	200128,57101
15	5000	62,50328	62,16049	67,20628	56,49137	67,45293
50000	5000	50576,79539	50680,40170	50547,76809	50529,19242	50936,17826
100000	5000	100002,42817	100028,63907	100005,48662	100049,73850	100431,35854
150000	5000	150003,71934	149982,55924	150007,73283	150055,75780	150445,47294
200000	5000	200229,00024	200223,23499	200252,92081	200360,19352	200713,50858

Tabelle C.52: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor	
c(CO ₂)/ppm	c(CO)/ppm	0,8 13,54	0,7 11,85
15	10	24,17219	24,24796
50000	10	50294,55148	50300,56533
100000	10	100415,33941	100551,30228
150000	10	151766,40194	152228,25270
200000	10	204159,40352	205113,26855
15	25	26,47998	25,43782
50000	25	50188,30223	50185,51136
100000	25	99793,31980	99822,58009
150000	25	149959,79229	149993,64784
200000	25	200510,36808	200558,46486
15	50	27,33281	25,18877
50000	50	50166,67646	50157,81160
100000	50	99667,87974	99687,52765
150000	50	149620,64434	149618,24833
200000	50	199821,07485	199760,28124
15	100	28,99071	24,69847
50000	100	50149,14991	50142,91395
100000	100	99613,78151	99633,87508
150000	100	149492,44315	149485,76404
200000	100	199570,99348	199508,17872
15	500	17,57539	17,52617
50000	500	50101,18111	50133,98083
100000	500	99491,08865	99552,91079
150000	500	149278,19192	149310,19892
200000	500	199231,54165	199196,36432
15	1250	35,81566	35,27149
50000	1250	50174,22889	50180,77059
100000	1250	99576,53377	99585,43209
150000	1250	149304,05532	149275,13416
200000	1250	199197,24009	199108,71420
15	2500	41,98884	44,30310
50000	2500	50394,21671	50294,33454
100000	2500	99520,11641	99521,86608
150000	2500	149333,95606	149205,22854
200000	2500	199174,09435	199088,71091
15	3750	56,76009	56,96367
50000	3750	50656,31298	50680,00971
100000	3750	99912,85418	100015,45097
150000	3750	149824,72022	149928,84802
200000	3750	199871,84658	199936,33142
15	5000	61,95628	62,86190
50000	5000	51004,23193	51075,18539
100000	5000	100401,03161	100753,09425
150000	5000	150532,07057	150921,32822
200000	5000	200779,84003	201084,21648

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Tabelle C.53: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungsprozeß 7.3 Hz .

Reingase CO ₂ / CO		RSS für die Konzentrationsbestimmung - SEP=693,74211				
c(CO ₂)/ppm	c(CO)/ppm	Konzentration CO im Detektor (als Faktor und Vol.% - Angabe				
		1,3 22	1,2 20,31	1,1 18,62	1,0 16,92	0,9 15,23
15	10	133,6977	132,7744	138,9651	121,7103	118,8331
50000	10	149013,2113	107680,1141	112447,5342	106348,2239	87966,1857
100000	10	29179,6175	14481,1658	43661,4743	78938,3092	99713,2787
150000	10	1027893,8936	930432,3697	1316380,5943	1740354,4254	2146537,1035
200000	10	6686098,9924	6496414,4644	8098190,3451	10098471,4809	12468821,6628
15	25	148,9193	153,5352	155,7852	128,1937	120,5558
50000	25	78478,5812	49014,7327	53267,3054	50514,5579	36973,1976
100000	25	109485,9763	150889,2495	93647,0930	65137,7253	63471,9565
150000	25	47906,2186	99006,8656	36820,2430	12101,0527	10308,6629
200000	25	144420,9232	50163,3172	124681,1752	199467,6592	195465,4088
15	50	193,0215	172,9437	149,8086	174,5420	139,8804
50000	50	63809,1296	38106,3888	41284,4238	39603,9784	28200,4305
100000	50	198865,0980	255018,3515	180065,6735	137464,9351	138340,9432
150000	50	253069,6722	358730,6887	236341,5797	161820,4182	177508,3904
200000	50	32330,5100	119856,5764	50367,3580	21656,5799	35860,2704
15	100	179,7092	214,1025	138,3730	161,4852	84,7370
50000	100	63155,4631	35868,7613	39951,4019	37553,7105	25395,4572
100000	100	233275,6681	301090,5881	217101,9165	174406,1573	175536,3484
150000	100	367350,3233	498440,7867	356670,4433	278198,7540	286669,0518
200000	100	146344,3965	302876,9320	194146,6365	141405,9087	178425,2429
15	500	275,4844	319,1471	364,2964	3,5799	5,3715
50000	500	97695,5767	60793,0187	46856,0060	28677,0028	34895,8373
100000	500	171125,3863	229883,4737	228004,8923	260042,6403	193865,0860
150000	500	289996,7440	399700,3657	422731,0137	406139,8078	398155,0125
200000	500	111198,7328	288877,6233	297649,7398	329195,6716	406410,6358
15	1250	526,2122	330,2242	369,8279	335,4159	426,7942
50000	1250	156508,7702	81067,2749	61666,3488	26965,7063	23401,7410
100000	1250	36729,2486	130333,3842	89428,1251	129870,2988	169088,8174
150000	1250	58250,8709	255922,1874	239087,1049	246441,8339	381242,5455
200000	1250	792,5085	157479,7773	185509,8355	256279,4422	417414,1782
15	2500	1140,7753	1064,6677	843,0331	812,8641	568,0227
50000	2500	148210,3057	192274,7938	228765,0758	146937,0550	131348,6457
100000	2500	17478,2194	66833,4552	20821,0222	36532,3485	140266,0786
150000	2500	18783,5449	78892,1179	63449,1501	104440,4932	249211,1748
200000	2500	21628,7727	57981,5606	9764,6639	26716,6939	218090,9470
15	3750	1627,8174	1778,0062	2012,7586	1277,5323	2035,7047
50000	3750	197283,8774	308199,4434	212231,9277	339991,2639	608304,3631
100000	3750	22071,2052	16500,1673	15751,6040	5969,6307	11917,4984
150000	3750	9717,9615	23101,9741	13907,8087	0,2078	5765,0797
200000	3750	17729,8195	2619,3820	4534,8611	23037,2132	16530,5056
15	5000	2256,5618	2224,1114	2725,4954	1721,5339	2751,3093
50000	5000	332692,9196	462946,4723	300049,8820	280044,6213	876429,7320
100000	5000	5,8960	820,1962	30,1030	2473,9185	186070,1904
150000	5000	13,8335	304,1801	59,7967	3108,9327	198446,1402
200000	5000	52441,1081	49833,8589	63968,9352	129739,3721	509094,4897
SEP		527,24584	556,09320	578,18453	627,24300	721,40435
SEA		606,35120	639,52668	664,93248	721,35144	829,64029
mittl.abs.Fehler		301,68096	343,53772	328,64540	338,55920	411,48996
mittl.rel.Fehler*		0,15084	0,17177	0,16432	0,16928	0,20574

* mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(CO₂)=200000 ppm

Tabelle C.54: CO Bestimmung aus der Mischung CO/CO₂ - beim Alterungspro-
zeß 7.3 Hz .

Reingase CO ₂ / CO		Konzentration CO im Detektor	
c(CO ₂)/ppm	c(CO)/ppm	0,8 13,54	0,7 11,85
15	10	84,1291	85,5248
50000	10	86760,5717	90339,5201
100000	10	172506,8274	303934,2065
150000	10	3120175,8214	4965110,0781
200000	10	17300637,6384	26145515,2997
15	25	131,7899	108,9481
50000	25	35457,7314	34414,4659
100000	25	42716,7041	31477,8237
150000	25	1616,6601	40,3499
200000	25	260475,5768	311883,0048
15	50	152,0981	103,8111
50000	50	27781,0418	24904,5011
100000	50	110303,8653	97638,9703
150000	50	143910,7168	145734,3392
200000	50	32014,2078	57465,0848
15	100	195,7399	94,0603
50000	100	22245,6967	20424,3967
100000	100	149164,7246	134047,4581
150000	100	257613,9574	264438,6238
200000	100	184046,5901	241888,1758
15	500	6,6326	6,3815
50000	500	10237,6180	17950,8637
100000	500	258990,7601	199888,7615
150000	500	521006,9106	475825,5249
200000	500	590528,2304	645830,3044
15	1250	433,2917	410,9332
50000	1250	30355,7058	32678,0068
100000	1250	179323,6507	171866,5500
150000	1250	484338,9920	525430,4917
200000	1250	644423,4741	794390,3735
15	2500	728,3975	858,6717
50000	2500	155406,8123	86632,8193
100000	2500	230288,2562	228612,0456
150000	2500	443614,5314	631661,6717
200000	2500	682120,1378	830447,8127
15	3750	1743,9048	1760,9500
50000	3750	430746,7342	462413,2091
100000	3750	7594,3933	238,7325
150000	3750	30723,0025	5062,6048
200000	3750	16423,3003	4053,6885
15	5000	2204,8926	2290,7616
50000	5000	1008481,7679	1156023,6262
100000	5000	160826,3502	567150,9462
150000	5000	283099,0956	848845,6884
200000	5000	608150,4798	1175525,3654
SEP		837,09412	1008,92971
SEA		962,68759	1160,30454
mittl.abs.Fehler		458,29357	518,62486
mittl.rel.Fehler*		0,22915	0,25931

* mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(CO₂)=200000 ppm

Kalibration SO₂ erster Alterungsprozeß

Tabelle C.55: Datensatz Amplitude SO₂ - erster Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm									
	100	200	400	500	759	1017	1276	1534	1741	2000
0	256.8359	505.6461	980.2842	1206.6097	1760.1316	2270.8018	2742.2825	3177.8154	3502.3882	3880.5811
1	244.2649	480.7777	931.6064	1146.4161	1671.2891	2154.8708	2600.73	3012.0237	3318.1299	3674.3533
2	226.6257	445.9325	863.5951	1062.4283	1547.7422	1994.1764	2405.1213	2783.5979	3064.8606	3391.6772
3	202.0356	397.4054	769.0817	945.821	1376.6515	1772.1914	2135.5698	2469.5549	2717.2925	3004.5986
4	168.1665	330.6257	639.2368	785.7832	1142.3124	1468.8112	1767.8793	2042.0226	2244.8403	2479.4397

Tabelle C.56: Datensatz Phase SO₂ - erster Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm									
	100	200	400	500	759	1017	1276	1534	1741	2000
0	-37.8108	-37.8144	-37.8213	-37.8245	-37.8324	-37.8394	-37.8457	-37.8514	-37.8554	-37.8598
1	-38.3386	-38.34	-38.3426	-38.3436	-38.3461	-38.3478	-38.349	-38.3496	-38.3496	-38.3491
2	-38.7801	-38.779	-38.7766	-38.7752	-38.7715	-38.7671	-38.7622	-38.7569	-38.7522	-38.746
3	-39.0691	-39.0648	-39.0562	-39.0517	-39.04	-39.0278	-39.0153	-39.0025	-38.9919	-38.9784
4	-39.0325	-39.0237	-39.0059	-38.997	-38.9735	-38.95	-38.926	-38.9019	-38.8825	-38.8581

Kalibration SO₂ zweiter Alterungsprozeß

Tabelle C.57: Datensatz Amplitude SO₂ - zweiter Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm									
	209	408	607	806	1005	1204	1403	1602	1801	2000
0	528.103	999.0292	1441.3669	1857.0349	2247.7356	2615.1619	2960.7949	3286.0486	3592.2463	3880.5811
1	523.7393	990.6827	1429.1985	1841.1906	2228.3672	2592.4075	2934.7881	3256.9124	3560.0923	3845.5452
2	519.0148	981.6559	1416.0474	1824.0858	2207.4636	2567.8604	2906.7493	3225.5178	3525.4822	3807.8428
3	513.9423	971.967	1401.9363	1805.7419	2185.0691	2541.5828	2876.7424	3191.9395	3488.4785	3767.562
4	508.4848	961.5508	1386.7799	1786.0463	2161.0322	2513.3877	2844.5774	3155.9634	3448.8528	3724.4329
5	502.6024	950.3329	1370.4637	1764.8589	2135.1907	2483.0918	2810.0164	3117.333	3406.3186	3678.1702
6	496.3089	938.3337	1353.0209	1742.218	2107.5881	2450.7476	2773.1445	3076.1362	3360.9871	3628.8716
7	489.5615	925.476	1334.3369	1717.9796	2078.051	2416.1602	2733.7283	3032.1128	3312.5559	3576.2383
8	482.3116	911.6685	1314.2843	1691.9767	2046.374	2379.0759	2691.4919	2984.9534	3260.7075	3519.906
9	474.5797	896.9413	1292.9049	1664.2643	2012.6353	2339.5889	2646.531	2934.7854	3205.5637	3460.0212
10	466.3067	881.1984	1270.0582	1634.6672	1976.6135	2297.4504	2598.5728	2881.2808	3146.7781	3396.2017

Tabelle C.58: Datensatz Phase SO₂ - zweiter Alterungsprozeß 7.3 Hz

Alter	Konzentration / ppm									
	209	408	607	806	1005	1204	1403	1602	1801	2000
0	-37.8147	-37.8216	-37.8278	-37.8337	-37.8391	-37.8441	-37.8486	-37.8527	-37.8565	-37.8598
1	-37.9219	-37.928	-37.9335	-37.9386	-37.9432	-37.9474	-37.9513	-37.9546	-37.9577	-37.9603
2	-38.0278	-38.033	-38.0377	-38.0421	-38.0459	-38.0494	-38.0524	-38.0551	-38.0574	-38.0593
3	-38.1314	-38.1359	-38.1397	-38.1433	-38.1463	-38.149	-38.1513	-38.1532	-38.1548	-38.1559
4	-38.2329	-38.2365	-38.2395	-38.2422	-38.2444	-38.2463	-38.2479	-38.249	-38.2497	-38.2502
5	-38.3322	-38.3349	-38.337	-38.3389	-38.3402	-38.3413	-38.342	-38.3423	-38.3423	-38.3419
6	-38.4282	-38.43	-38.4312	-38.4322	-38.4327	-38.4329	-38.4327	-38.4322	-38.4314	-38.4302
7	-38.5209	-38.5217	-38.522	-38.5221	-38.5217	-38.521	-38.52	-38.5186	-38.5169	-38.5149
8	-38.61	-38.6098	-38.6092	-38.6083	-38.6069	-38.6053	-38.6034	-38.6011	-38.5985	-38.5956
9	-38.6945	-38.6932	-38.6916	-38.6897	-38.6874	-38.6848	-38.6819	-38.6787	-38.6752	-38.6714
10	-38.7738	-38.7715	-38.7688	-38.7659	-38.7626	-38.759	-38.7551	-38.751	-38.7465	-38.7418

Tabelle C.59: Mittelwert der Konzentrationsabhängigkeit der Phase des Meßsignals beim SO₂ an verschiedenen Altersstufen.

Konzentration/ppm	Statistik		
	\bar{x}	S _t	%
50	-37.83986	0.014436565	0.038151739
209	-37.94365	0.01230376	0.0324264
408	-38.04601	0.010131777	0.026630327
607	-38.14608	0.007915529	0.02075057
806	-38.24386	0.005651053	0.014776367
1005	-38.3393	0.003347835	0.008732124
1204	-38.43137	0.001434608	0.003732909
1403	-38.51998	0.002314649	0.006008957
1602	-38.60481	0.00477796	0.012376592
1801	-38.68484	0.007476523	0.019326752
2000	-38.7596	0.010293687	0.026557775

Tabelle C.60: Parameter m und b der linearen Regression (Altersabhängigkeit der Phase) beim SO₂ für verschiedene Konzentrationen.

Konzentration/ppm	Statistik		
	m	b	r ²
50	-0.0972	-37.8290	0.9981
209	-0.0964	-37.8350	0.9981
408	-0.0955	-37.8420	0.998
607	-0.0946	-37.8490	0.9979
806	-0.0937	-37.8550	0.9978
1005	-0.0929	-37.8600	0.9977
1204	-0.0920	-37.8650	0.9977
1403	-0.0912	-37.8700	0.9976
1602	-0.0904	-37.8740	0.9975
1801	-0.0895	-37.8780	0.9974
2000	-0.0887	-37.8820	0.9973
\bar{x}	-0.0929	-37.8581	0.9977
S _t	0.00269977	0.016908602	
%	0.290553514	0.004466311	

Kalibration H₂O erster Alterungsprozeß

Tabelle C.61: H₂O Datensatz 1.Alterung 7.3 Hz

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	81.1897	49.6110	34.6872	20.3019	10.3177	8.4891	7.2499	6.3364
1	90.7197	58.0711	40.6128	23.3789	11.6429	9.5312	8.1055	7.0579
2	101.6826	71.6450	51.6519	29.6692	14.4837	11.7992	9.9990	8.6809
3	111.3220	89.7595	71.2747	44.0493	21.5931	17.5406	14.8312	12.8577
4	112.4125	101.2323	91.0940	70.9229	42.2818	35.3097	30.3475	26.6013

Tabelle C.62: Ergebnisse für die erste Regression mit den Modell Shifted Power.

Konzentration/ppm	Regressionsparameter		
	a	b	c
0	488415.5052	-10711.5514	-0.8893
1	1332162.7902	-14635.0324	-0.9608
2	6919092.0499	-24555.8164	-1.0735
3	85637065.3984	-52763.6676	-1.2312
4	231454636.9209	-131604.9848	-1.2273
\bar{y}	65166274.5329	-46854.2105	-1.0764

Tabelle C.63: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen/ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	81.4005	48.4906	35.0286	20.9652	10.1095	8.1178	6.8087	5.8804
1	91.0860	56.3941	41.0173	24.3702	11.3638	9.0049	7.4679	6.3868
2	102.4423	69.0719	51.8050	31.2912	14.2109	11.0856	9.0620	7.6498
3	112.7329	86.9992	70.2418	46.1430	21.8101	16.9378	13.7343	11.4849
4	113.2364	100.6230	90.3470	71.1918	42.8821	35.3969	29.9869	25.9159
\bar{y}	100.1796	72.3158	57.6880	38.7923	20.0753	16.1086	13.4120	11.4635
S _t	12.39783	19.22792	20.24935	18.36208	12.10586	10.12196	8.63355	7.48814
%	12.38	26.59	35.10	47.33	60.30	62.84	64.37	65.32

Tabelle C.64: Ergebnisse für die zweite Regression mit den Modell Shifted Power bei konstantem Parameter c

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	4337840.103	-17784.10973	-1.0764
1	5189971.624	-19300.34943	-1.0764
2	7168077.044	-24699.87227	-1.0764
3	12477340.58	-41211.00613	-1.0764
4	31480111.88	-106481.3287	-1.0764
\bar{y}	12130668.2455	-41895.3333	-1.0764

Tabelle C.65: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach zweiter Regression bei konstantem c .

Alter	Konzentrationen/ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	80.7884	49.8894	35.8040	20.5318	8.9211	6.9003	5.6088	4.7155
1	90.6738	57.2760	41.5513	24.1199	10.5836	8.2009	6.6738	5.6154
2	102.4300	69.0926	51.8210	31.2879	14.1907	11.0640	9.0403	7.6284
3	113.5389	86.2906	69.3550	45.8642	22.6691	17.9806	14.8609	12.6428
4	113.9919	100.5753	89.9044	70.5660	43.0131	35.8521	30.6826	26.7857
\bar{y}	100.2846	72.6248	57.6871	38.4740	19.8755	15.9996	13.3733	11.4776
S_t	12.96640	18.61690	19.73698	18.24345	12.50446	10.63978	9.22791	8.13143
%	12.93	25.63	34.21	47.42	62.91	66.50	69.00	70.85

Tabelle C.66: Ergebnisse für die dritte Regression mit den Modell Shifted Power ermittelten Parametern a, b und c bei konstanten Parametern c und b .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	12130668.2455	-76440.0282	-1.0764
1	12130668.2455	-63830.3528	-1.0764
2	12130668.2455	-50847.2697	-1.0764
3	12130668.2455	-39729.3609	-1.0764
4	12130668.2455	-33948.6388	-1.0764
\bar{y}	12130668.2455	-52959.1301	-1.0764

Tabelle C.67: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach dritte Regression bei konstantem c und b .

Alter	Konzentrationen/ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	61.1613	51.7567	44.7928	33.2121	18.7231	15.2985	12.9066	11.1466
1	72.9573	60.0830	50.9734	36.5746	19.7930	16.0164	13.4204	11.5320
2	90.7244	71.8463	59.3172	40.7965	21.0250	16.8267	13.9922	11.9565
3	114.1562	86.0983	68.8682	45.2342	22.2037	17.5860	14.5206	12.3447
4	131.5928	95.8862	75.1027	47.9294	22.8683	18.0075	14.8108	12.5563
\bar{y}	87.2895	69.6405	57.7856	40.0470	20.8146	16.6895	13.8960	11.8854
S_t	25.88949	16.21549	11.13340	5.40198	1.51995	0.99307	0.69792	0.51660
%	29.66	23.28	19.27	13.49	7.30	5.95	5.02	4.35

Tabelle C.68: Ergebnisse der Rekonstruktion der Phasenlage mit den Shifted Power Modell nach vierter Regression

	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1897	49.6110	34.6872	20.3019	10.3177	8.4891	7.2499	6.3364
1	90.7197	58.0711	40.6128	23.3789	11.6429	9.5312	8.1055	7.0579
2	101.6826	71.6450	51.6519	29.6692	14.4837	11.7992	9.9990	8.6809
3	111.3220	89.7595	71.2747	44.0493	21.5931	17.5406	14.8312	12.8577
4	112.4125	101.2323	91.0940	70.9229	42.2818	35.3097	30.3475	26.6013
\bar{y}	87.2895	69.6405	57.7856	40.0470	20.8146	16.6895	13.8960	11.8854
SEP	19.13679	22.03331	23.22428	20.88500	13.18932	11.06615	9.54481	8.39446
%	21.92	31.64	40.19	52.15	63.37	66.31	68.69	70.63
SEA	17.11647	13.28659	14.00477	12.59413	7.95346	6.67314	5.75574	5.06205
%	78.07	41.99	34.85	24.15	12.55	10.06	8.38	7.17

Tabelle C.69: Ergebnisse der ersten Regression mit dem Modell Bleasdale .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0043	0.00000040	1.1246
1	0.0062	0.00000042	1.0411
2	0.0104	0.00000042	0.9320
3	0.0190	0.00000036	0.8129
4	0.0201	0.00000015	0.8153
\bar{y}	0.0120	0.00000035	0.9452

Tabelle C.70: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Bleasdale Modell ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	81.4008	48.4897	35.0281	20.9657	10.1105	8.1188	6.8097	5.8814
1	91.0867	56.3922	41.0164	24.3711	11.3658	9.0069	7.4698	6.3887
2	102.4441	69.0684	51.8027	31.2924	14.2151	11.0899	9.0663	7.6539
3	112.7370	86.9956	70.2374	46.1421	21.8156	16.9442	13.7412	11.4918
4	113.2390	100.6226	90.3450	71.1891	42.8827	35.3988	29.9899	25.9196
\bar{y}	88.5215	64.8953	51.0621	32.8557	15.8840	12.5602	10.3658	8.8132
S_t	12.39908	19.22790	20.24853	18.36072	12.10537	10.12194	8.63389	7.48875
%	14.01	29.63	39.65	55.88	76.21	80.59	83.29	84.97

Tabelle C.71: Ergebnisse für die zweite Regression mit dem Modell Bleasdale bei konstantem Parameter a .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0112	0.00000065	0.9452
1	0.0102	0.00000055	0.9452
2	0.0097	0.00000041	0.9452
3	0.0097	0.00000024	0.9452
4	0.0106	0.00000010	0.9452
\bar{y}	0.0103	0.00000039	0.9452

Tabelle C.72: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach zweiter Regression bei konstantem a .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	80.8483	49.7744	35.7362	20.5680	9.0232	7.0041	5.7103	4.8133
1	90.7390	57.1494	41.4720	24.1561	10.6987	8.3190	6.7900	5.7278
2	102.5066	68.9615	51.7211	31.3094	14.3190	11.2006	9.1776	7.7633
3	113.6371	86.1870	69.2358	45.8344	22.7892	18.1244	15.0156	12.8019
4	114.0927	100.5628	89.8391	70.4818	43.0378	35.9207	30.7833	26.9094
\bar{y}	98.6499	68.0209	51.6898	31.7980	14.7483	11.5674	9.4949	8.0417
S_t	12.98267	18.65187	19.73549	18.19688	12.47231	10.62298	9.22384	8.13739
%	13.16	27.42	38.18	57.23	84.57	91.84	97.15	101.19

Tabelle C.73: Ergebnisse für die dritte Regression mit dem Modell Bleasdale bei konstanten Parametern a und c .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0103	0.00000070	0.9452
1	0.0103	0.00000055	0.9452
2	0.0103	0.00000039	0.9452
3	0.0103	0.00000023	0.9452
4	0.0103	0.00000011	0.9452
\bar{y}	0.0103	0.00000039	0.9452

Tabelle C.74: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach dritter Regression bei konstantem a und c .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	83.8345	49.4767	34.8545	19.6514	8.4844	6.5670	5.3441	4.4987
1	90.5153	57.1505	41.5221	24.2178	10.7377	8.3510	6.8169	5.7511
2	98.9684	68.4861	52.1452	32.1564	14.9467	11.7279	9.6293	8.1571
3	108.7484	84.5434	68.9954	46.7169	23.7771	19.0034	15.7965	13.5000
4	117.5252	102.6085	90.9798	70.4148	42.1745	35.0229	29.9042	26.0685
\bar{y}	98.4945	67.7950	51.4693	31.6251	14.6528	11.4902	9.4303	7.9862
S_t	12.13245	19.14860	20.24663	18.36015	12.24667	10.35894	8.95026	7.86688
%	12.32	28.24	39.34	58.06	83.58	90.15	94.91	98.51

Tabelle C.75: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach vierter Regression

	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1897	49.6110	34.6872	20.3019	10.3177	8.4891	7.2499	6.3364
1	90.7197	58.0711	40.6128	23.3789	11.6429	9.5312	8.1055	7.0579
2	101.6826	71.6450	51.6519	29.6692	14.4837	11.7992	9.9990	8.6809
3	111.3220	89.7595	71.2747	44.0493	21.5931	17.5406	14.8312	12.8577
4	112.4125	101.2323	91.0940	70.9229	42.2818	35.3097	30.3475	26.6013
\bar{y}	98.4945	67.7950	51.4693	31.6251	14.6528	11.4902	9.4303	7.9862
SEP	13.4937	22.5861	24.2997	21.7871	14.4863	12.4189	10.8804	9.6737
%	13.7000	33.3153	47.2120	68.8919	98.8639	108.0826	115.3778	121.1301
SEA	12.0692	13.6199	14.6533	13.1381	8.7356	7.4889	6.5611	5.8334
%	12.2536	20.0899	28.4699	41.5434	59.6172	65.1763	69.5754	73.0442

Tabelle C.76: Ergebnisse der ersten Regression mit dem Modell Harris

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0075	0.00000139	0.9196
1	0.0075	0.00000059	0.9802
2	0.0077	0.00000017	1.0615
3	0.0079	0.00000004	1.1331
4	0.0084	0.00000003	1.0872
\bar{y}	0.0078	0.00000022	1.0363

Tabelle C.77: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Harris Modell ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	81.4016	48.4545	35.0701	21.0024	10.0602	8.0496	6.7294	5.7945
1	91.0520	56.4615	41.0787	24.3616	11.2773	8.9093	7.3689	6.2874
2	102.2878	69.4059	51.9456	31.1669	14.0401	10.9377	8.9351	7.5404
3	112.2740	87.6684	70.6271	45.8965	21.5148	16.7498	13.6356	11.4551
4	112.8335	100.8771	90.6455	71.1969	42.6735	35.2805	29.9809	26.0142
\bar{y}	100.8813	69.4441	52.6110	32.2305	14.9428	11.7356	9.6475	8.1835
S_t	12.21922	19.39229	20.36594	18.34873	12.05611	10.11351	8.669053	7.56350
%	12.11250	27.92506	38.71042	56.92962	80.68181	86.17792	89.85780	92.42378

Tabelle C.78: Ergebnisse für die zweite Regression mit dem Modell Harris bei konstantem Parameter a .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0087	0.00000038	1.0363
1	0.0080	0.00000032	1.0363
2	0.0075	0.00000023	1.0363
3	0.0075	0.00000014	1.0363
4	0.0083	0.00000006	1.0363
\bar{y}	0.0080	0.00000022	1.0363

Tabelle C.79: Ergebnisse der Rekonstruktion der Phasenlage mit dem Harris Modell nach zweiter Regression bei konstantem a .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	80.8691	49.7866	35.6989	20.5384	9.0545	7.0469	5.7592	4.8653
1	90.7470	57.1799	41.4412	24.1214	10.7292	8.3634	6.8420	5.7841
2	102.4794	69.0447	51.7197	31.2586	14.3288	11.2299	9.2193	7.8128
3	113.5107	86.3600	69.3330	45.7846	22.7291	18.0882	14.9998	12.8020
4	113.7673	100.6883	90.0582	70.6114	42.9274	35.7801	30.6363	26.7671
\bar{y}	98.5358	67.9635	51.5439	31.6174	14.6745	11.5272	9.4775	8.0400
S_t	12.87988	18.70379	19.83194	18.25378	12.41785	10.55262	9.14847	8.06238
%	13.07127	27.52032	38.47538	57.73335	84.62202	91.545085	96.52861	100.27838

Tabelle C.80: Ergebnisse für die dritte Regression mit dem Modell Harris bei konstanten Parameter a und c .

Konzentration / ppm	Regressionsparameter		
	a	b	c
0	0.0080	0.00000041	1.0363
1	0.0080	0.00000031	1.0363
2	0.0080	0.00000022	1.0363
3	0.0080	0.00000013	1.0363
4	0.0080	0.00000006	1.0363
\bar{y}	0.0080	0.00000022	1.0363

Tabelle C.81: Ergebnisse der Rekonstruktion der Phasenlage mit dem Harris Modell nach dritter Regression bei konstantem a und c .

Alter	Konzentrationen / ppm							
	7000	21000	35000	70700	174160	225890	277620	329280
0	83.9504	49.4594	34.7858	19.6094	8.5148	6.6095	5.3926	4.5503
1	90.6021	57.1812	41.4737	24.1605	10.7536	8.3834	6.8589	5.7987
2	98.9481	68.5789	52.1464	32.0887	14.9336	11.7367	9.6528	8.1907
3	108.4693	84.6587	69.0877	46.6871	23.7190	18.9653	15.7767	13.4954
4	116.8284	102.5357	91.0936	70.5548	42.1631	34.9894	29.8652	26.0320
\bar{y}	98.3591	67.7017	51.2884	31.4185	14.5655	11.4392	9.4038	7.9768
S_t	11.84610	19.13575	20.31750	18.42848	12.23198	10.33117	8.91782	7.83393
%	12.04373	28.26482	39.61419	58.65496	83.97886	90.31344	94.83182	98.20955

Tabelle C.82: Ergebnisse der Rekonstruktion der Phasenlage mit dem Harris Modell nach vierter Regression

	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1897	49.6110	34.6872	20.3019	10.3177	8.4891	7.2499	6.3364
1	90.7197	58.0711	40.6128	23.3789	11.6429	9.5312	8.1055	7.0579
2	101.6826	71.6450	51.6519	29.6692	14.4837	11.7992	9.9990	8.6809
3	111.3220	89.7595	71.2747	44.0493	21.5931	17.5406	14.8312	12.8577
4	112.4125	101.2323	91.0940	70.9229	42.2818	35.3097	30.3475	26.6013
\bar{y}	98.3591	67.7017	51.2884	31.4185	14.5655	11.4392	9.4038	7.9768
SEP	13.5067	22.6187	24.3600	21.8598	14.5273	12.4449	10.8946	9.6789
%	13.7321	33.4094	47.4961	69.5764	99.7374	108.7911	115.8533	121.3395
SEA	13.5067	22.6187	24.3600	21.8598	14.5273	12.4449	10.8946	9.6789
%	13.7321	33.4094	47.4961	69.5764	99.7374	108.7911	115.8533	121.3395

Kalibration H₂O zweiter Alterungsprozeß

Tabelle C.83: H₂O Datensatz 2. Alterung 7.3 Hz

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1885	81.3795	81.5934	81.8212	82.0683	82.6720	83.4351	84.4060
1	34.6871	34.4666	34.2589	34.0591	33.8743	33.5696	33.3799	33.3512
2	20.4548	20.2274	20.0058	19.7884	19.5792	19.1938	18.8674	18.6183
3	15.0478	14.8370	14.6312	14.4267	14.2290	13.8540	13.5153	13.2250
4	12.1381	11.9404	11.7461	11.5529	11.3639	11.0020	10.6651	10.3613
5	10.2800	10.0918	9.90590	9.72120	9.53960	9.18740	8.85440	8.54400
6	8.96870	8.78720	8.60770	8.42920	8.25300	7.90890	7.57860	7.26460
7	7.98070	7.80510	7.63020	7.45640	7.28390	6.94580	6.61770	6.30060
8	7.20100	7.02940	6.85890	6.68850	6.51970	6.18620	5.86020	5.54070
9	6.56480	6.39670	6.22940	6.06210	5.89570	5.56620	5.24090	4.91950
10	6.03240	5.86690	5.70240	5.53720	5.37320	5.04660	4.72260	4.39940

Tabelle C.84: Ergebnisse für die erste Regression mit den Modell Shifted Power

Konzentration/ppm	Regressionsparameter		
	a	b	c
7000	267070.9766	-8605.251016	-0.838721646
35000	294946.0412	-8654.221296	-0.848486953
70000	327781.561	-8719.390868	-0.858776305
105000	366561.6163	-8800.121676	-0.869600834
140000	412962.2818	-8902.464301	-0.881030848
210000	539070.3714	-9183.265228	-0.906183473
280000	739084.7337	-9609.553746	-0.935289946
350000	1085172.602	-10245.82646	-0.969874426
\bar{y}	546854.3874	-9183.573459	-0.897556846

D Tabellen

Tabelle C.85: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen/ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.2157	34.3040	20.9269	15.3658	12.2668	8.8744	7.0299	5.8594
1	81.4053	34.0989	20.6912	15.1406	12.0564	8.6902	6.8657	5.7105
2	81.6178	33.9065	20.4619	14.9195	11.8489	8.5078	6.7028	5.5628
3	81.8443	33.7222	20.2359	14.7001	11.6425	8.3260	6.5404	5.4155
4	82.0901	33.5532	20.0181	14.4860	11.4400	8.1468	6.3800	5.2699
5	82.3785	33.4075	19.8119	14.2791	11.2425	7.9706	6.2217	5.1260
6	82.6912	33.2805	19.6148	14.0776	11.0486	7.7964	6.0649	4.9832
7	83.0423	33.1824	19.4322	13.8848	10.8604	7.6253	5.9100	4.8418
8	83.4518	33.1231	19.2695	13.7043	10.6809	7.4594	5.7586	4.7031
9	83.9054	33.0992	19.1235	13.5330	10.5070	7.2959	5.6084	4.5650
10	84.4204	33.1262	19.0031	13.3770	10.3431	7.1376	5.4614	4.4289
\bar{y}	91.1986	37.0242	21.9315	15.7901	12.4212	8.7941	6.8574	5.6449
S_t	8.70564	3.52011	2.15102	1.60575	1.30643	0.97923	0.79931	0.68322
%	9.55	9.51	9.81	10.17	10.52	11.14	11.66	12.10

Tabelle C.86: Ergebnisse für die zweite Regression mit den Modell Shifted Power bei konstantem Parameter c .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	536267.0584	-11043.21443	-0.8976
35000	527283.5954	-10655.95792	-0.8976
70000	518592.3544	-10277.09891	-0.8976
105000	510113.1795	-9905.969102	-0.8976
140000	501983.5829	-9546.487309	-0.8976
210000	486911.3564	-8856.652073	-0.8976
280000	473802.5579	-8218.339558	-0.8976
350000	463141.9242	-7640.695127	-0.8976
\bar{y}	496408.9856	-9253.7193	-0.8976

Tabelle C.87: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach zweiter Regression bei konstantem c .

Alter	Konzentrationen/ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1143	34.9885	21.0634	15.2615	12.0460	8.5587	6.6860	5.5101
1	81.3238	34.6641	20.7998	15.0509	11.8715	8.4286	6.5819	5.4230
2	81.5559	34.3487	20.5436	14.8465	11.7023	8.3025	6.4810	5.3386
3	81.8013	34.0376	20.2919	14.6461	11.5365	8.1791	6.3823	5.2562
4	82.0656	33.7377	20.0495	14.4533	11.3772	8.0606	6.2876	5.1771
5	82.3723	33.4555	19.8197	14.2703	11.2259	7.9481	6.1977	5.1020
6	82.7030	33.1863	19.6001	14.0955	11.0814	7.8407	6.1119	5.0303
7	83.0721	32.9383	19.3958	13.9326	10.9467	7.7404	6.0318	4.9634
8	83.4997	32.7206	19.2121	13.7854	10.8248	7.6496	5.9592	4.9027
9	83.9717	32.5277	19.0457	13.6515	10.7136	7.5667	5.8928	4.8472
10	84.5056	32.3731	18.9052	13.5372	10.6184	7.4953	5.8356	4.7993
\bar{y}	82.4651	33.5611	19.8926	14.3256	11.2706	7.9806	6.2235	5.1233
S_t	1.06272	0.84501	0.69374	0.55352	0.45804	0.34099	0.27262	0.22780
%	1.29	2.52	3.49	3.86	4.06	4.27	4.38	4.45

Tabelle C.88: Ergebnisse für die dritte Regression mit den Modell Shifted Power ermittelten Parametern a, b und c bei konstanten Parametern c und b .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	496608.0051	-9253.7193	-0.8976
35000	496124.8325	-9253.7193	-0.8976
70000	495785.9721	-9253.7193	-0.8976
105000	495533.0662	-9253.7193	-0.8976
140000	495417.7204	-9253.7193	-0.8976
210000	495886.1757	-9253.7193	-0.8976
280000	497431.7954	-9253.7193	-0.8976
350000	500398.7216	-9253.7193	-0.8976
\bar{y}	496719.9681	-9253.7193	-0.8976

Tabelle C.89: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Modell Shifted Power ermittelten Werten der Parameter a, b und c nach dritte Regression bei konstantem c und b .

Alter	Konzentrationen/ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	82.4982	33.5745	19.9006	14.3314	11.2751	7.9838	6.2259	5.1254
1	82.4179	33.5418	19.8812	14.3174	11.2642	7.9760	6.2199	5.1204
2	82.3616	33.5189	19.8676	14.3076	11.2565	7.9706	6.2156	5.1169
3	82.3196	33.5018	19.8575	14.3003	11.2507	7.9665	6.2125	5.1143
4	82.3004	33.4940	19.8529	14.2970	11.2481	7.9647	6.2110	5.1131
5	82.3255	33.5042	19.8589	14.3014	11.2515	7.9671	6.2129	5.1146
6	82.3782	33.5257	19.8716	14.3105	11.2587	7.9722	6.2169	5.1179
7	82.4745	33.5649	19.8948	14.3273	11.2719	7.9815	6.2242	5.1239
8	82.6350	33.6302	19.9336	14.3551	11.2938	7.9971	6.2363	5.1339
9	82.8456	33.7159	19.9844	14.3917	11.3226	8.0174	6.2522	5.1470
10	83.1279	33.8308	20.0525	14.4408	11.3612	8.0448	6.2735	5.1645
\bar{y}	82.5168	33.5821	19.9050	14.3346	11.2777	7.9856	6.2274	5.1265
S_t	0.24735	0.10067	0.05967	0.04297	0.03381	0.02394	0.01867	0.01537
%	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Tabelle C.90: Ergebnisse der Rekonstruktion der Phasenlage mit den Shifted Power Modell nach vierter Regression bei konstantem a, b und c

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1885	34.6871	20.4548	15.0478	12.1381	8.9687	7.2010	6.0324
1	81.3795	34.4666	20.2274	14.8370	11.9404	8.7872	7.0294	5.8669
2	81.5934	34.2589	20.0058	14.6312	11.7461	8.6077	6.8589	5.7024
3	81.8212	34.0591	19.7884	14.4267	11.5529	8.4292	6.6885	5.5372
4	82.0683	33.8743	19.5792	14.2290	11.3639	8.2530	6.5197	5.3732
5	82.3580	33.7127	19.3818	14.0383	11.1812	8.0799	6.3523	5.2100
6	82.6720	33.5696	19.1938	13.8540	11.0020	7.9089	6.1862	5.0466
7	83.0243	33.4555	19.0203	13.6784	10.8292	7.7410	6.0215	4.8838
8	83.4351	33.3799	18.8674	13.5153	10.6651	7.5786	5.8602	4.7226
9	83.8899	33.3400	18.7300	13.3624	10.5080	7.4187	5.6991	4.5606
10	84.4060	33.3512	18.6183	13.2250	10.3613	7.2646	5.5407	4.3994
\bar{y}	82.5168	33.5821	19.9050	14.3346	11.2777	7.9856	6.2274	5.1265
SEP	0.86255	0.59892	0.82126	0.69642	0.62226	0.59564	0.58201	0.56031
%	1.05	1.78	4.13	4.86	5.52	7.46	9.35	10.93
SEA	1.00906	0.51878	0.75146	0.63716	0.57017	0.55151	0.54216	0.52348
%	1.22	1.54	3.78	4.44	5.06	6.91	8.71	10.21

Tabelle C.91: Ergebnisse der ersten Regression mit dem Modell Bleasdale .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.00291407	3.387037E-07	1.192347757
35000	0.00309484	3.576680E-07	1.178616618
70000	0.00329438	3.778732E-07	1.164487831
105000	0.00351476	3.994437E-07	1.149986357
140000	0.00376002	4.223955E-07	1.135061806
210000	0.00434420	4.730850E-07	1.103548702
280000	0.00510429	5.311911E-07	1.069201539
350000	0.00613126	5.984353E-07	1.031072789
\bar{y}	0.00422431	4.554964E-07	1.116486392

Tabelle C.92: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Bleasdale Modell ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.2158	34.3035	20.9268	15.3658	12.2669	8.8746	7.0302	5.8596
1	81.4053	34.0985	20.6911	15.1407	12.0565	8.6903	6.8659	5.7107
2	81.6179	33.9062	20.4618	14.9195	11.8490	8.5079	6.7030	5.5630
3	81.8443	33.7220	20.2359	14.7002	11.6426	8.3262	6.5406	5.4157
4	82.0901	33.5530	20.0181	14.4861	11.4401	8.1469	6.3801	5.2701
5	82.3785	33.4073	19.8119	14.2792	11.2426	7.9707	6.2219	5.1262
6	82.6912	33.2804	19.6149	14.0777	11.0486	7.7965	6.0650	4.9833
7	83.0423	33.1823	19.4322	13.8848	10.8605	7.6254	5.9101	4.8419
8	83.4518	33.1230	19.2695	13.7043	10.6809	7.4594	5.7587	4.7031
9	83.9054	33.0991	19.1235	13.5331	10.5071	7.2960	5.6085	4.5650
10	84.4204	33.1262	19.0031	13.3770	10.3432	7.1376	5.4614	4.4290
\bar{y}	80.8699	32.9976	19.5837	14.1140	11.1101	7.8730	6.1429	5.0591
S_t	1.95871	0.66745	0.68350	0.66619	0.63188	0.56216	0.50473	0.45887
%	2.42	2.02	3.49	4.72	5.69	7.14	8.22	9.07

Tabelle C.93: Ergebnisse für die zweite Regression mit dem Modell Bleasdale bei konstantem Parameter a .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.004224314	3.982065E-07	1.128493068
35000	0.004224314	4.091551E-07	1.125344807
70000	0.004224314	4.203794E-07	1.122095478
105000	0.004224314	4.319315E-07	1.118764482
140000	0.004224314	4.436607E-07	1.115370159
210000	0.004224314	4.676158E-07	1.108247886
280000	0.004224314	4.915357E-07	1.100800966
350000	0.004224314	5.144871E-07	1.093088740
\bar{y}	0.004224314	4.559510E-07	1.111417147

Tabelle C.94: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach zweiter Regression bei konstantem a .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.0762	34.8843	21.0599	15.2996	12.1031	8.6298	6.7599	5.5832
1	81.2902	34.5850	20.7995	15.0826	11.9176	8.4849	6.6401	5.4804
2	81.5273	34.2950	20.5459	14.8710	11.7365	8.3435	6.5230	5.3799
3	81.7783	34.0095	20.2963	14.6627	11.5584	8.2043	6.4078	5.2810
4	82.0489	33.7353	20.0552	14.4613	11.3860	8.0695	6.2962	5.1852
5	82.3624	33.4793	19.8261	14.2690	11.2209	7.9401	6.1888	5.0928
6	82.7008	33.2364	19.6064	14.0841	11.0620	7.8152	6.0851	5.0036
7	83.0785	33.0146	19.4012	13.9102	10.9120	7.6970	5.9867	4.9188
8	83.5157	32.8234	19.2159	13.7513	10.7740	7.5874	5.8951	4.8396
9	83.9984	32.6569	19.0469	13.6047	10.6460	7.4851	5.8093	4.7653
10	84.5445	32.5282	18.9029	13.4768	10.5331	7.3938	5.7322	4.6983
\bar{y}	82.4747	33.5043	19.8355	14.2736	11.2234	7.9406	6.1886	5.0922
S_t	1.08695	0.76326	0.69291	0.58420	0.50259	0.39516	0.32833	0.28260
%	1.32	2.28	3.49	4.09	4.48	4.98	5.31	5.55

Tabelle C.95: Ergebnisse für die dritte Regression mit dem Modell Bleasdale bei konstanten Parametern a und c .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.004224314	4.458348E-07	1.111417147
35000	0.004224314	4.485385E-07	1.111417147
70000	0.004224314	4.509824E-07	1.111417147
105000	0.004224314	4.532696E-07	1.111417147
140000	0.004224314	4.552899E-07	1.111417147
210000	0.004224314	4.580640E-07	1.111417147
280000	0.004224314	4.588520E-07	1.111417147
350000	0.004224314	4.570801E-07	1.111417147
\bar{y}	0.004224314	4.547189E-07	1.111417147

Tabelle C.96: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach dritter Regression bei konstantem a und c .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	83.1898	34.0421	20.1919	14.5406	11.4377	8.0956	6.3106	5.1933
1	82.9974	33.8966	20.0953	14.4682	11.3796	8.0535	6.2775	5.1659
2	82.8243	33.7662	20.0089	14.4035	11.3276	8.0159	6.2479	5.1413
3	82.6630	33.6451	19.9287	14.3434	11.2793	7.9811	6.2204	5.1186
4	82.5211	33.5389	19.8584	14.2908	11.2371	7.9505	6.1964	5.0987
5	82.4129	33.4582	19.8050	14.2508	11.2050	7.9274	6.1781	5.0836
6	82.3270	33.3942	19.7628	14.2192	11.1796	7.9090	6.1637	5.0716
7	82.2752	33.3557	19.7373	14.2001	11.1643	7.8980	6.1550	5.0644
8	82.2721	33.3534	19.7358	14.1990	11.1634	7.8973	6.1545	5.0640
9	82.3068	33.3792	19.7528	14.2117	11.1737	7.9047	6.1603	5.0688
10	82.3957	33.4454	19.7966	14.2445	11.1999	7.9237	6.1752	5.0812
\bar{y}	82.5611	33.5688	19.8782	14.3056	11.2490	7.9591	6.2032	5.1043
S_t	0.30166	0.22621	0.14976	0.11219	0.09006	0.06508	0.05127	0.04246
%	0.37	0.67	0.75	0.78	0.80	0.82	0.83	0.83

Tabelle C.97: Ergebnisse der Rekonstruktion der Phasenlage mit dem Bleasdale Modell nach vierter Regression bei konstantem a, b und c

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1885	34.6871	20.4548	15.0478	12.1381	8.9687	7.2010	6.0324
1	81.3795	34.4666	20.2274	14.8370	11.9404	8.7872	7.0294	5.8669
2	81.5934	34.2589	20.0058	14.6312	11.7461	8.6077	6.8589	5.7024
3	81.8212	34.0591	19.7884	14.4267	11.5529	8.4292	6.6885	5.5372
4	82.0683	33.8743	19.5792	14.2290	11.3639	8.2530	6.5197	5.3732
5	82.3580	33.7127	19.3818	14.0383	11.1812	8.0799	6.3523	5.2100
6	82.6720	33.5696	19.1938	13.8540	11.0020	7.9089	6.1862	5.0466
7	83.0243	33.4555	19.0203	13.6784	10.8292	7.7410	6.0215	4.8838
8	83.4351	33.3799	18.8674	13.5153	10.6651	7.5786	5.8602	4.7226
9	83.8899	33.3400	18.7300	13.3624	10.5080	7.4187	5.6991	4.5606
10	84.4060	33.3512	18.6183	13.2250	10.3613	7.2646	5.5407	4.3994
\bar{y}	82.5623	33.5704	19.8794	14.3065	11.2498	7.9597	6.2036	5.1047
SEP	1.32797	0.37205	0.66255	0.55986	0.51091	0.52567	0.52968	0.51475
%	1.61	1.11	3.33	3.91	4.54	6.60	8.54	10.08
SEA	1.00946	0.52449	0.73595	0.62632	0.56743	0.55720	0.54844	0.52750
%	1.22	1.56	3.70	4.38	5.04	7.00	8.84	10.33

Tabelle C.98: Ergebnisse der ersten Regression mit dem Modell Harris .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.006756320	2.574463E-06	0.867097396
35000	0.006759932	2.378907E-06	0.875363412
70000	0.006767422	2.186557E-06	0.884077723
105000	0.006779139	1.999482E-06	0.893237798
140000	0.006796500	1.817355E-06	0.902900709
210000	0.006846237	1.467961E-06	0.924080396
280000	0.006925106	1.141333E-06	0.948363829
350000	0.007039790	8.435949E-07	0.976732173
\bar{y}	0.006849833	1.573913E-06	0.916616540

Tabelle C.99: Ergebnisse der Rekonstruktion der Phasenlage mit den über das Harris Modell ermittelten Werten der Parameter a, b und c nach erster Regression .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.2196	34.2622	20.9780	15.4069	12.2879	8.8636	6.9993	5.8164
1	81.4087	34.0612	20.7396	15.1789	12.0756	8.6794	6.8364	5.6699
2	81.6207	33.8730	20.5073	14.9547	11.8661	8.4970	6.6750	5.5246
3	81.8467	33.6928	20.2783	14.7323	11.6577	8.3153	6.5142	5.3799
4	82.0920	33.5279	20.0572	14.5150	11.4531	8.1362	6.3554	5.2369
5	82.3800	33.3864	19.8476	14.3049	11.2536	7.9602	6.1989	5.0958
6	82.6922	33.2637	19.6467	14.0999	11.0576	7.7864	6.0440	4.9560
7	83.0429	33.1700	19.4599	13.9033	10.8673	7.6158	5.8912	4.8178
8	83.4520	33.1153	19.2925	13.7189	10.6856	7.4504	5.7422	4.6825
9	83.9052	33.0961	19.1412	13.5434	10.5094	7.2877	5.5947	4.5482
10	84.4197	33.1284	19.0148	13.3825	10.3430	7.1304	5.4508	4.4165
\bar{y}	82.5382	33.4760	19.8773	14.3121	11.2503	7.9483	6.1840	5.0799
S_t	1.00365	0.39426	0.63254	0.64666	0.61931	0.55048	0.49135	0.44395
%	1.22	1.18	3.18	4.52	5.50	6.93	7.95	8.74

Tabelle C.100: Ergebnisse für die zweite Regression mit dem Modell Harris bei konstantem Parameter a .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.006849833	2.417012E-06	0.872423938
35000	0.006849833	2.237489E-06	0.880543274
70000	0.006849833	2.065798E-06	0.888886020
105000	0.006849833	1.903250E-06	0.897418429
140000	0.006849833	1.750102E-06	0.906101323
210000	0.006849833	1.464115E-06	0.924303734
280000	0.006849833	1.208401E-06	0.943487577
350000	0.006849833	9.814568E-07	0.963764336
\bar{y}	0.006849833	1.641342E-06	0.916297425

Tabelle C.101: Ergebnisse der Rekonstruktion der Phasenlage mit dem Harris Modell nach zweiter Regression bei konstantem a .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1826	34.3462	21.0031	15.4057	12.2737	8.8383	6.9702	5.7860
1	81.3733	34.1424	20.7632	15.1772	12.0615	8.6547	6.8083	5.6407
2	81.5884	33.9478	20.5286	14.9527	11.8527	8.4741	6.6491	5.4979
3	81.8190	33.7574	20.2962	14.7301	11.6458	8.2955	6.4919	5.3570
4	82.0711	33.5771	20.0704	14.5130	11.4438	8.1210	6.3384	5.2196
5	82.3675	33.4159	19.8552	14.3034	11.2478	7.9511	6.1887	5.0855
6	82.6908	33.2670	19.6476	14.0997	11.0569	7.7853	6.0428	4.9548
7	83.0558	33.1389	19.4523	13.9053	10.8737	7.6255	5.9018	4.8285
8	83.4822	33.0423	19.2754	13.7241	10.7009	7.4734	5.7671	4.7075
9	83.9570	32.9704	19.1127	13.5533	10.5365	7.3276	5.6376	4.5911
10	84.4984	32.9365	18.9729	13.3991	10.3854	7.1916	5.5160	4.4814
\bar{y}	81.1313	32.4903	19.2273	13.8257	10.8604	7.6672	5.9631	4.8974
S_t	1.03996	0.46713	0.65213	0.64143	0.60235	0.52427	0.46254	0.41474
%	1.28	1.44	3.39	4.64	5.55	6.84	7.76	8.47

Tabelle C.102: Ergebnisse für die dritte Regression mit dem Modell Harris bei konstanten Parameter a und c .

Konzentration / ppm	Regressionsparameter		
	a	b	c
7000	0.006849833	1.550034E-06	0.916297425
35000	0.006849833	1.558335E-06	0.916297425
70000	0.006849833	1.565814E-06	0.916297425
105000	0.006849833	1.572795E-06	0.916297425
140000	0.006849833	1.578934E-06	0.916297425
210000	0.006849833	1.587217E-06	0.916297425
280000	0.006849833	1.589249E-06	0.916297425
350000	0.006849833	1.583230E-06	0.916297425
\bar{y}	0.006849833	1.576906E-06	0.916297425

Tabelle C.103: Ergebnisse der Rekonstruktion der Phasenlage mit dem Harris Modell nach dritter Regression bei konstantem a und c .

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	83.1873	33.9590	20.2032	14.5590	11.4499	8.0938	6.2992	5.1757
1	82.9960	33.8200	20.1104	14.4891	11.3937	8.0531	6.2671	5.1491
2	82.8245	33.6958	20.0275	14.4267	11.3435	8.0167	6.2384	5.1253
3	82.6651	33.5806	19.9508	14.3690	11.2971	7.9831	6.2119	5.1034
4	82.5253	33.4800	19.8837	14.3186	11.2565	7.9537	6.1888	5.0842
5	82.4201	33.4044	19.8334	14.2808	11.2261	7.9317	6.1714	5.0699
6	82.3376	33.3452	19.7941	14.2512	11.2023	7.9145	6.1579	5.0586
7	82.2897	33.3109	19.7713	14.2341	11.1885	7.9045	6.1500	5.0521
8	82.2916	33.3123	19.7722	14.2347	11.1891	7.9049	6.1503	5.0524
9	82.3321	33.3412	19.7914	14.2492	11.2007	7.9133	6.1570	5.0579
10	82.4279	33.4099	19.8371	14.2836	11.2283	7.9333	6.1727	5.0709
\bar{y}	82.5714	33.5132	19.9058	14.3352	11.2699	7.9634	6.1964	5.0906
S_t	0.29351	0.21180	0.14112	0.10615	0.08541	0.06184	0.04874	0.04036
%	0.36	0.63	0.71	0.74	0.76	0.78	0.79	0.79

Tabelle C.104: Ergebnisse der Rekonstruktion der Phasenlage mit den Harris Modell nach vierter Regression bei konstantem a, b und c

Alter	Konzentrationen / ppm							
	7000	35000	70000	105000	140000	210000	280000	350000
0	81.1885	34.6871	20.4548	15.0478	12.1381	8.9687	7.2010	6.0324
1	81.3795	34.4666	20.2274	14.8370	11.9404	8.7872	7.0294	5.8669
2	81.5934	34.2589	20.0058	14.6312	11.7461	8.6077	6.8589	5.7024
3	81.8212	34.0591	19.7884	14.4267	11.5529	8.4292	6.6885	5.5372
4	82.0683	33.8743	19.5792	14.2290	11.3639	8.2530	6.5197	5.3732
5	82.3580	33.7127	19.3818	14.0383	11.1812	8.0799	6.3523	5.2100
6	82.6720	33.5696	19.1938	13.8540	11.0020	7.9089	6.1862	5.0466
7	83.0243	33.4555	19.0203	13.6784	10.8292	7.7410	6.0215	4.8838
8	83.4351	33.3799	18.8674	13.5153	10.6651	7.5786	5.8602	4.7226
9	83.8899	33.3400	18.7300	13.3624	10.5080	7.4187	5.6991	4.5606
10	84.4060	33.3512	18.6183	13.2250	10.3613	7.2646	5.5407	4.3994
\bar{y}	82.5725	33.5145	19.9068	14.3360	11.2705	7.9639	6.1968	5.0909
SEP	1.31710	0.42709	0.68961	0.57992	0.51854	0.52814	0.53471	0.52048
%	1.60	1.27	3.46	4.05	4.60	6.63	8.63	10.22
SEA	1.00983	0.55455	0.75256	0.63773	0.56934	0.55620	0.55042	0.53049
%	1.22	1.65	3.78	4.45	5.05	6.98	8.88	10.42

Kalibration Grau erster Alterungsprozeß

Tabelle C.105: Datensatz Amplitude Grau - erster Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm				
	1	2	3	4	5
0	57.1141	113.6579	169.6387	225.0538	279.9203
1	50.621	100.7362	150.3505	199.4661	248.0943
2	42.7976	85.1675	127.1146	168.6399	209.751
3	33.2495	66.1672	98.7564	131.0182	162.9593
4	21.9965	43.7724	65.3302	86.6739	107.8023

Tabelle C.106: Datensatz Phase Grau - erster Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm				
	1	2	3	4	5
0	-25.0321	-25.0323	-25.0326	-25.0323	-25.0324
1	-24.3127	-24.3129	-24.3129	-24.3126	-24.3129
2	-22.6352	-22.6353	-22.6355	-22.6353	-22.6353
3	-18.6908	-18.6912	-18.6914	-18.6912	-18.6915
4	-7.6235	-7.6231	-7.6226	-7.6232	-7.6227

Kalibration Grau zweiter Alterungsprozeß

Tabelle C.107: Datensatz Amplitude Grau - zweiter Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm					
	0	1	2	3	4	5
0	0	57.1141	113.6579	169.6387	225.0538	279.9203
1	0	56.0218	111.4817	166.3907	220.7467	274.5599
2	0	54.8905	109.2319	163.0321	216.2892	269.0196
3	0	53.7266	106.9166	159.5733	211.7035	263.3129
4	0	52.5243	104.5238	156.0041	206.9677	257.42
5	0	51.2768	102.0411	152.2983	202.0524	251.3058
6	0	49.9906	99.4802	148.4764	196.9827	245.0009
7	0	48.6592	96.8321	144.5224	191.7366	238.4776
8	0	47.2752	94.0775	140.4111	186.2823	231.6946
9	0	45.8447	91.2313	136.1651	180.6477	224.6874
10	0	44.3617	88.2811	131.7594	174.8053	217.4181

Tabelle C.108: Datensatz Phase Grau - zweiter Alterungsprozeß 7.3 Hz .

Alter	Konzentration / ppm				
	1	2	3	4	5
0	-25.0321	-25.0323	-25.0326	-25.0323	-25.0324
1	-25.0374	-25.0371	-25.0375	-25.0373	-25.0372
2	-25.0324	-25.0324	-25.0326	-25.0322	-25.0325
3	-25.0164	-25.0166	-25.0165	-25.0164	-25.0164
4	-24.9875	-24.9876	-24.9877	-24.9876	-24.9875
5	-24.9425	-24.9426	-24.9427	-24.9427	-24.9424
6	-24.8804	-24.8802	-24.8804	-24.8805	-24.8803
7	-24.7977	-24.7978	-24.7977	-24.7977	-24.7976
8	-24.6898	-24.6898	-24.6897	-24.6897	-24.6897
9	-24.5541	-24.5542	-24.5544	-24.5542	-24.5543
10	-24.3854	-24.3857	-24.3855	-24.3856	-24.3855

Tabelle C.109: Datensatz Phase Grau - zweiter Alterungsprozeß 7.3 Hz Mittelwerte .

Alter	Statistik		
	\bar{y}	S_t	%
0	-25.0164	0.00045	0.00179
1	-25.03926	0.00040	0.00161
2	-25.04332	0.00036	0.00143
3	-25.02858	0.00031	0.00125
4	-24.99504	0.00027	0.00107
5	-24.9427	0.00022	0.00090
6	-24.87156	0.00018	0.00072
7	-24.78162	0.00013	0.00054
8	-24.67288	0.00009	0.00036
9	-24.54534	0.00004	0.00018
10	-24.399	0.00000	0.00000

Tabelle C.110: Regressionsparameter Phase Grau - zweiter Alterungsprozeß 7.3 Hz Mittelwerte .

Parameter	Konzentration/ppm					Statistik		
	1	2	3	4	5	\bar{y}	S_t	%
a	0.0094	0.0094	0.0094	0.0094	0.0094	0.0094	0	0
b	-0.0323	-0.0323	-0.0322	-0.0323	-0.0322	-0.03226	0.00005	0.15186
c	-25.016	-25.016	-25.017	-25.016	-25.017	-25.0164	0.00049	0.00196

Kalibration NH₃ erster Alterungsprozeß

Tabelle C.111: Datensatz Amplitude NH₃ - erster Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm						Regression	
	0	100	200	300	400	500	reg	r ²
0	0	2.1173	4.1647	6.1479	8.0731	9.9439	0.0199x+0.1052	1.000
1	0	2.1351	4.1996	6.1994	8.1407	10.0273	0.02x+0.1061	1.000
2	0	2.13	4.1895	6.1842	8.1202	10.0017	0.02x+0.1061	1.000
3	0	2.0987	4.1273	6.0918	7.9977	9.8497	0.0197x+0.1054	1.000
4	0	2.163	4.3232	6.4809	8.6359	10.7883	0.0216x+0.0044	1.000
\bar{y}	0	2.12882	4.20086	6.22084	8.19352	10.12218	0.0202x + 0.0854	1.000
S _t	0.00000	0.02121	0.06606	0.13521	0.22659	0.33860		
%	0.00	1.00	1.57	2.17	2.77	3.35		

Tabelle C.112: Datensatz Phase NH₃ - erster Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm				
	100	200	300	400	500
0	117.459	117.4657	117.4718	117.4809	117.4891
1	118.2715	118.2799	118.2877	118.2979	118.3074
2	118.9358	118.9452	118.9541	118.9648	118.9751
3	119.4613	119.4709	119.4804	119.4909	119.5014
4	119.8454	119.8548	119.8646	119.8746	119.8852
reg	0.5963x+117.6	0.5969x+117.61	0.5978x+117.62	0.598x+117.63	0.5986x+117.63
r ²	0.9805	0.9803	0.9803	0.9801	0.9801

Tabelle C.113: Mittelwerte Phase NH₃ - erster Alterungsprozeß 7.3 Hz.

Alter	Regression		
	\bar{y}	S _t	%
0	117.4733	0.01069	0.009
1	118.28888	0.01272	0.011
2	118.955	0.01390	0.012
3	119.48098	0.01417	0.012
4	119.86492	0.01406	0.012
reg	0.5975x+117.62		
r ²	0.9803		

Kalibration NH₃ zweiter Alterungsprozeß

Tabelle C.114: Datensatz Amplitude NH₃ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm					Regression		
	0	100	200	300	400	500	reg	r ²
0	0	2.1414	4.212	6.2178	8.1647	10.0569	0.0201x+0.1064	1.000
1	0	2.1608	4.2502	6.2741	8.2387	10.1479	0.0203x+0.1074	1.000
2	0	2.1531	4.2351	6.2517	8.2094	10.1117	0.0202x+0.107	1.000
3	0	2.1675	4.2634	6.2936	8.2643	10.1794	0.0203x+0.1077	1.000
4	0	2.1795	4.2871	6.3285	8.3101	10.2359	0.0205x+0.1083	1.000
5	0	2.189	4.3057	6.3561	8.3462	10.28	0.0205x+0.1089	1.000
6	0	2.1959	4.3192	6.376	8.3722	10.3122	0.0206x+0.1092	1.000
7	0	2.2	4.3274	6.3881	8.3881	10.3316	0.0207x+0.1095	1.000
8	0	2.2013	4.33	6.3917	8.393	10.3378	0.0207x+0.1095	1.000
9	0	2.1997	4.3268	6.3873	8.3868	10.3302	0.0206x+0.1095	1.000
10	0	2.195	4.3177	6.3738	8.3692	10.3086	0.0206x+0.1092	1.000
\bar{y}	0	2.1803	4.2886	6.3308	8.3130	10.2393	0.0205x+0.1084	1.000
S _t	0	0.02031	0.04000	0.05904	0.07739	0.09523		
%	0	0.932	0.933	0.933	0.931	0.930		

Tabelle C.115: Datensatz Phase NH₃ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm				
	100	200	300	400	500
0	117.459	117.4657	117.4718	117.4809	117.4891
1	117.9041	117.9106	117.9165	117.9251	117.9329
2	118.3278	118.334	118.3396	118.348	118.3552
3	118.7304	118.7364	118.7419	118.7499	118.757
4	119.1145	119.1201	119.1255	119.133	119.14
5	119.4805	119.486	119.4914	119.4983	119.5048
6	119.8297	119.8353	119.8401	119.8467	119.853
7	120.1634	120.1686	120.1733	120.1797	120.1855
8	120.4821	120.4872	120.4916	120.4979	120.5037
9	120.7868	120.7918	120.7965	120.802	120.8077
10	121.0786	121.0833	121.0879	121.0932	121.0989
reg	0.3607x+117.59	0.3605x+117.6	0.3603x+117.61	0.3599x+117.61	0.3597x+117.62
r ²	0.996	0.996	0.996	0.996	0.996

Tabelle C.116: Mittelwerte Phase NH₃ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Regression		
	\bar{y}	S_t	%
0	117.4733	0.01069	0.009
1	117.91784	0.01022	0.009
2	118.34092	0.00976	0.008
3	118.74312	0.00946	0.008
4	119.12662	0.00906	0.008
5	119.4922	0.00862	0.007
6	119.84096	0.00822	0.007
7	120.1741	0.00783	0.007
8	120.4925	0.00764	0.006
9	120.79696	0.00736	0.006
10	121.08838	0.00715	0.006
reg	0.3602x + 117.61		
r ²	0.996		

Kalibration C₂H₄ erster Alterungsprozeß

Tabelle C.117: Datensatz Amplitude C₂H₄ - erster Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm						Regression	
	0	100	200	300	400	500	reg	r ²
0	0	2.0422	4.082	6.1192	8.1543	10.1869	0.0204x+0.004	1.0000
1	0	2.0707	4.1388	6.2046	8.2677	10.3287	0.0207x+0.0041	1.0000
2	0	2.0997	4.1968	6.2914	8.3834	10.473	0.0209x+0.0042	1.0000
3	0	2.1302	4.2577	6.3827	8.505	10.625	0.0212x+0.0043	1.0000
4	0	2.163	4.3232	6.4809	8.6359	10.7883	0.0216x+0.0044	1.0000
\bar{y}	0	2.10116	4.1997	6.29576	8.38926	10.48038	0.021x+0.0042	1.0000
S _t	0.00000	0.04260	0.08507	0.12754	0.16985	0.21210		
%	0.000	0.001	0.004	0.008	0.014	0.022		

Tabelle C.118: Datensatz Phase C₂H₄ - erster Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm				
	100	200	300	400	500
0	117.7881	117.7913	117.7942	117.7979	117.8013
1	118.4826	118.4857	118.4888	118.4918	118.4953
2	119.1675	119.1704	119.1736	119.1763	119.1796
3	119.8487	119.8515	119.8545	119.8572	119.8604
4	120.5315	120.5341	120.537	120.5397	120.5425
reg	0.6853x+117.79	0.6851x+117.8	0.6851x+117.8	0.6849x+117.8	0.6848x+117.81
r ²	1	1	1	1	1

Tabelle C.119: Mittelwerte Phase C₂H₄ - erster Alterungsprozeß 7.3 Hz.

Alter	Regression		
	\bar{y}	S _t	%
0	117.79456	0.00467	0.004
1	118.48884	0.00446	0.004
2	119.17348	0.00426	0.004
3	119.85446	0.00412	0.003
4	120.53696	0.00390	0.003
reg	0.685x+117.8		
r ²	1		

Kalibration C₂H₄ zweiter AlterungsprozeßTabelle C.120: Datensatz Amplitude C₂H₄ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm						Regression	
	0	100	200	300	400	500	reg	r ²
0	0	2.0661	4.1298	6.191	8.2498	10.3062	0.0207x+0.0041	1.00000
1	0	2.0767	4.1509	6.2226	8.2918	10.3588	0.0206x+0.0042	1.00000
2	0	2.0612	4.1198	6.176	8.2295	10.2809	0.0206x+0.0042	1.00000
3	0	2.0679	4.1332	6.1961	8.2562	10.3141	0.0207x+0.0043	1.00000
4	0	2.0727	4.1428	6.2103	8.2751	10.3377	0.0207x+0.0044	1.00000
5	0	2.0755	4.1484	6.2186	8.2861	10.3512	0.0207x+0.0045	1.00000
6	0	2.0762	4.1497	6.2206	8.2886	10.3543	0.0207x+0.0045	1.00000
7	0	2.0747	4.1468	6.2161	8.2825	10.3466	0.0207x+0.0046	1.00000
8	0	2.0711	4.1394	6.2049	8.2678	10.3279	0.0206x+0.0047	1.00000
9	0	2.0651	4.1274	6.1868	8.2436	10.2975	0.0205x+0.0047	1.00000
10	0	2.0566	4.1105	6.1615	8.2097	10.255	0.0206x+0.0044	1.00000
\bar{y}	0	2.0694	4.1362	6.2004	8.2619	10.3209	0.0206x+0.0041	1.00000
S _t	0	0.00633	0.01269	0.01906	0.02543	0.03193		
%	0	0.306	0.307	0.307	0.308	0.309		

Tabelle C.121: Datensatz Phase C₂H₄ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Konzentration / ppm				
	100	200	300	400	500
0	117.7881	117.7913	117.7942	117.7979	117.8013
1	118.1551	118.1582	118.1614	118.1642	118.1676
2	118.5083	118.5111	118.514	118.5166	118.52
3	118.8476	118.8501	118.8531	118.8554	118.8585
4	119.174	119.1763	119.179	119.1813	119.1843
5	119.4885	119.4908	119.4931	119.4952	119.498
6	119.7913	119.7934	119.7956	119.7974	119.7998
7	120.0829	120.0849	120.087	120.0886	120.0909
8	120.3646	120.3664	120.3682	120.37	120.3718
9	120.6363	120.6379	120.6395	120.6411	120.6428
10	120.8984	120.8999	120.9014	120.9029	120.9042
reg	0.3103x+117.88	0.3101x+117.88	0.31x+117.89	0.3098x+117.89	0.3096x+117.89
r ²	0.9973	0.9973	0.9973	0.9973	0.9973

Tabelle C.122: Mittelwerte Phase C₂H₄ - zweiter Alterungsprozeß 7.3 Hz.

Alter	Regression		
	\bar{y}	S _t	%
0	117.79456	0.00467	0.00397
1	118.1613	0.00439	0.00371
2	118.514	0.00409	0.00345
3	118.85294	0.00384	0.00323
4	119.17898	0.00362	0.00304
5	119.49312	0.00331	0.00277
6	119.7955	0.00297	0.00248
7	120.08686	0.00279	0.00232
8	120.3682	0.00255	0.00211
9	120.63952	0.00229	0.00190
10	120.90136	0.00207	0.00171
reg	0.3099x+117.89		
r ²	0.9973		

Ersatzkalibriermittel während des Alterungsprozesses

Ersatzkalibriermittel Ammoniak während des ersten Alterungsprozesses

Tabelle C.123: Ersatzkalibriermittel NH₃ (erster Alterungsprozess) .

$c(\text{SO}_2)_{\text{Detek.}}$	$c(\text{NH}_3)$	A	φ
40	100	2,1173	117,459
35	100	2,1351	118,2715
30	100	2,13	118,9358
25	100	2,0987	119,4613
20	100	2,0369	119,8454
40	200	4,1647	117,4657
35	200	4,1996	118,2799
30	200	4,1895	118,9452
25	200	4,1273	119,4709
20	200	4,0049	119,8548
40	300	6,1479	117,4718
35	300	6,1994	118,2877
30	300	6,1842	118,9541
25	300	6,0918	119,4804
20	300	5,9101	119,8646
40	400	8,0731	117,4809
35	400	8,1407	118,2979
30	400	8,1202	118,9648
25	400	7,9977	119,4909
20	400	7,7576	119,8746
40	500	9,9439	117,4891
35	500	10,0273	118,3074
30	500	10,0017	118,9751
25	500	9,8497	119,5014
20	500	9,5523	119,8852

Tabelle C.124: Ersatzkalibriermittel NH₃ (erster Alterungsprozess)-Mittelwerte Amplitude .

$c(\text{NH}_3)$	A	S^2	S_t
100	2,10	0,0013	0,0356
200	4,14	0,0050	0,0707
300	6,11	0,0110	0,1050
400	8,02	0,0194	0,1391
500	9,87	0,0298	0,1725

Tabelle C.125: Ersatzkalibriermittel NH₃ (erster Alterungsprozess)-predicted Amplitude .

$c(\text{NH}_3)$	\hat{A}	Residuen	SEP
100	2,16	0,059	0,0775
200	4,11	-0,032	0,0868
300	6,05	-0,060	0,1351
400	7,99	-0,029	0,1588
500	9,93	0,056	0,2028
Regressionsparameter)			
	Parameter	Value	Error
	a_0	0,2210	0,0666
	a_1	0,0194	0,0002
	r	S_t	SEP
	0,99984	0,06349	0,05499

Tabelle C.126: Ersatzkalibriermittel NH₃ (erster Alterungsprozess)-Mittelwerte Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\bar{\varphi}$	S^2	S_t
40	117,47	0,00011	0,0107
35	118,29	0,00016	0,0127
30	118,96	0,00019	0,0139
25	119,48	0,00020	0,0142
20	119,86	0,00020	0,0141

Tabelle C.127: Ersatzkalibriermittel NH_3 (erster Alterungsprozess)-predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\phi}$	Residuen	SEP
40	117,48	0,002	0,0122
35	118,29	0,003	0,0146
30	118,96	0,007	0,0172
25	119,48	0,003	0,0163
20	119,86	-0,005	0,0167
Regressionsparameter)			
	Parameter	Value	Error
	a_0	119,8926	0,0222
	a_1	0,0572	0,0015
	a_2	-0,0029	0,0000
	r	S_t	SEP
	1,0000	0,00239	0,00486

Ersatzkalibriermittel Ammoniak während des zweiten Alterungsprozesses

Tabelle C.128: Ersatzkalibriermittel NH₃ (zweiter Alterungsprozess) .

$c(\text{SO}_2)_{\text{Detek.}}$	$c(\text{NH}_3)$	A	φ
40	100	2,0422	117,459
39	100	2,0526	117,9041
38	100	2,0612	118,3278
37	100	2,0679	118,7304
36	100	2,0727	119,1145
35	100	2,0755	119,4805
34	100	2,0762	119,8297
33	100	2,0747	120,1634
32	100	2,0711	120,4821
31	100	2,0651	120,7868
30	100	2,0566	121,0786
40	200	4,082	117,4657
39	200	4,1026	117,9106
38	200	4,1198	118,334
37	200	4,1332	118,7364
36	200	4,1428	119,1201
35	200	4,1484	119,486
34	200	4,1497	119,8353
33	200	4,1468	120,1686
32	200	4,1394	120,4872
31	200	4,1274	120,7918
30	200	4,1105	121,0833
40	300	6,1192	117,4718
39	300	6,1503	117,9165
38	300	6,176	118,3396
37	300	6,1961	118,7419
36	300	6,2103	119,1255
35	300	6,2186	119,4914
34	300	6,2206	119,8401
33	300	6,2161	120,1733
32	300	6,2049	120,4916
31	300	6,1868	120,7965
30	300	6,1615	121,0879

Tabelle C.129: Ersatzkalibriermittel NH_3 (zweiter Alterungsprozess - cont.).

$c(\text{SO}_2)_{\text{Detek.}}$	$c(\text{NH}_3)$	A	φ
40	400	8,1543	117,4809
39	400	8,1954	117,9251
38	400	8,2295	118,348
37	400	8,2562	118,7499
36	400	8,2751	119,133
35	400	8,2861	119,4983
34	400	8,2886	119,8467
33	400	8,2825	120,1797
32	400	8,2678	120,4979
31	400	8,2436	120,802
30	400	8,2097	121,0932
40	500	10,1869	117,4891
39	500	10,2382	117,9329
38	500	10,2809	118,3552
37	500	10,3141	118,757
36	500	10,3377	119,14
35	500	10,3512	119,5048
34	500	10,3543	119,853
33	500	10,3466	120,1855
32	500	10,3279	120,5037
31	500	10,2975	120,8077
30	500	10,255	121,0989

Tabelle C.130: Ersatzkalibriermittel NH_3 (zweiter Alterungsprozess)-Mittelwerte Amplitude .

$c(\text{NH}_3)$	A	S^2	S_t
100	2,07	0,0001	0,0104
200	4,13	0,0004	0,0208
300	6,19	0,0010	0,0311
400	8,24	0,0017	0,0413
500	10,30	0,0026	0,0515

Tabelle C.131: Ersatzkalibriermittel NH₃ (zweiter Alterungsprozess)-predicted Amplitude .

c(NH₃)	\hat{A}	Residuen	SEP
100	2,07	0,007	0,0131
200	4,13	0,001	0,0218
300	6,19	-0,001	0,0326
400	8,24	-0,001	0,0433
500	10,30	0,001	0,0540
Regressionsparameter)			
	Parameter	Value	Error
	a ₀	0,0150	0,0033
	a ₁	0,0206	0,0000
	r	S _t	SEP
	1,00000	0,00316	0,00370

Tabelle C.132: Ersatzkalibriermittel NH₃ (zweiter Alterungsprozess)-Mittelwerte Phase .

c(SO₂)_{Detek.}	$\bar{\varphi}$	S²	S_t
40	117,47	0,000114	0,0107
39	117,92	0,000105	0,0102
38	118,34	0,000095	0,0098
37	118,74	0,000089	0,0095
36	119,13	0,000082	0,0091
35	119,49	0,000074	0,0086
34	119,84	0,000067	0,0082
33	120,17	0,000061	0,0078
32	120,49	0,000058	0,0076
31	120,80	0,000054	0,0074
30	121,09	0,000051	0,0071

Tabelle C.133: Ersatzkalibriermittel NH₃ (zweiter Alterungsprozess)-predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\phi}$	Residuen	SEP
40	117,48	0,009	0,0156
39	117,92	0,000	0,0114
38	118,34	-0,004	0,0118
37	118,74	-0,004	0,0115
36	119,12	-0,002	0,0104
35	119,49	0,001	0,0097
34	119,85	0,004	0,0103
33	120,18	0,006	0,0111
32	120,50	0,006	0,0108
31	120,80	0,003	0,0089
30	121,08	-0,004	0,0090
Regressionsparameter)			
	Parameter	Value	Error
	a_0	121,8242	0,2883
	a_1	0,2271	0,0166
	a_2	-0,0084	0,0002
	r	S_t	SEP
	1,0000	0,00693	0,00477

Ersatzkalibriermittel Ethen während des ersten Alterungsprozesses

Tabelle C.134: Ersatzkalibriermittel C₂H₄ (erster Alterungsprozess) .

c(SO ₂) _{Detek.}	c(C ₂ H ₄)	A	φ
40	100	2,0422	117,7881
35	100	2,0707	118,4826
30	100	2,0997	119,1675
25	100	2,1302	119,8487
20	100	2,163	120,5315
40	200	4,082	117,7913
35	200	4,1388	118,4857
30	200	4,1968	119,1704
25	200	4,2577	119,8515
20	200	4,3232	120,5341
40	300	6,1192	117,7942
35	300	6,2046	118,4888
30	300	6,2914	119,1736
25	300	6,3827	119,8545
20	300	6,4809	120,537
40	400	8,1543	117,7979
35	400	8,2677	118,4918
30	400	8,3834	119,1763
25	400	8,505	119,8572
20	400	8,6359	120,5397
40	500	10,1869	117,8013
35	500	10,3287	118,4953
30	500	10,473	119,1796
25	500	10,625	119,8604
20	500	10,7883	120,5425

Tabelle C.135: Ersatzkalibriermittel C_2H_4 (erster Alterungsprozess)-Mittelwerte Amplitude .

$c(C_2H_4)$	A	S^2	S_t
100	2,10	0,0018	0,0426
200	4,14	0,0072	0,0707
300	6,11	0,0163	0,1050
400	8,02	0,0288	0,1391
500	9,87	0,0450	0,1725

Tabelle C.136: Ersatzkalibriermittel C_2H_4 (erster Alterungsprozess)-predicted Amplitude .

$c(C_2H_4)$	\hat{A}	Residuen	SEP
100	2,16	0,062	0,0840
200	4,11	-0,032	0,1423
300	6,05	-0,060	0,3125
400	7,99	-0,029	0,4861
500	9,93	0,056	0,6584
Regressionsparameter)			
	Parameter	Value	Error
	a_0	0,2210	0,0666
	a_1	0,0194	0,0002
	r	S_t	SEP
	0,99984	0,06349	0,05566

Tabelle C.137: Ersatzkalibriermittel C_2H_4 (erster Alterungsprozess)-Mittelwerte Phase .

$c(SO_2)_{Detek.}$	$\bar{\varphi}$	S^2	S_t
40	117,79	0,000022	0,0047
35	118,49	0,000020	0,0045
30	119,17	0,000018	0,0043
25	119,85	0,000017	0,0041
20	120,54	0,000015	0,0039

Tabelle C.138: Ersatzkalibriermittel C₂H₄ (erster Alterungsprozess)-predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\varphi}$	Residuen	SEP
40	117,79	-0,001	0,0054
35	118,48	-0,005	0,0078
30	119,17	-0,003	0,0056
25	119,86	0,001	0,0047
20	120,54	0,000	0,0044
Regressionsparameter)			
	Parameter	Value	Error
	a ₀	123,2354	0,0628
	a ₁	-0,1338	0,0044
	a ₂	-0,0001	0,0001
	r	S _t	SEP
	1,0000	0,00676	0,00309

Ersatzkalibriermittel Ethen während des zweiten Alterungsprozesses

Tabelle C.139: Ersatzkalibriermittel C₂H₄ (zweiter Alterungsprozess) .

c(SO ₂) _{Detek.}	c(C ₂ H ₄)	A	φ
40	100	2,0422	117,7881
39	100	2,0526	118,1551
38	100	2,0612	118,5083
37	100	2,0679	118,8476
36	100	2,0727	119,174
35	100	2,0755	119,4885
34	100	2,0762	119,7913
33	100	2,0747	120,0829
32	100	2,0711	120,3646
31	100	2,0651	120,6363
30	100	2,0566	120,8984
40	200	4,082	117,7913
39	200	4,1026	118,1582
38	200	4,1198	118,5111
37	200	4,1332	118,8501
36	200	4,1428	119,1763
35	200	4,1484	119,4908
34	200	4,1497	119,7934
33	200	4,1468	120,0849
32	200	4,1394	120,3664
31	200	4,1274	120,6379
30	200	4,1105	120,8999
40	300	6,1192	117,7942
39	300	6,1503	118,1614
38	300	6,176	118,514
37	300	6,1961	118,8531
36	300	6,2103	119,179
35	300	6,2186	119,4931
34	300	6,2206	119,7956
33	300	6,2161	120,087
32	300	6,2049	120,3682
31	300	6,1868	120,6395
30	300	6,1615	120,9014

Tabelle C.140: Ersatzkalibriermittel C_2H_4 (zweiter Alterungsprozess - cont.) .

$c(SO_2)_{Detek.}$	$c(C_2H_4)$	A	φ
40	400	8,1543	117,7979
39	400	8,1954	118,1642
38	400	8,2295	118,5166
37	400	8,2562	118,8554
36	400	8,2751	119,1813
35	400	8,2861	119,4952
34	400	8,2886	119,7974
33	400	8,2825	120,0886
32	400	8,2678	120,37
31	400	8,2436	120,6411
30	400	8,2097	120,9029
40	500	10,1869	117,8013
39	500	10,2382	118,1676
38	500	10,2809	118,52
37	500	10,3141	118,8585
36	500	10,3377	119,1843
35	500	10,3512	119,498
34	500	10,3543	119,7998
33	500	10,3466	120,0909
32	500	10,3279	120,3718
31	500	10,2975	120,6428
30	500	10,255	120,9042

Tabelle C.141: Ersatzkalibriermittel C_2H_4 (zweiter Alterungsprozess)-
Mittelwerte Amplitude .

$c(C_2H_4)$	A	S^2	S_t
100	2,07	0,0001	0,0104
200	4,13	0,0004	0,0208
300	6,19	0,0010	0,0311
400	8,24	0,0017	0,0413
500	10,30	0,0026	0,0515

Tabelle C.142: Ersatzkalibriermittel C₂H₄ (zweiter Alterungsprozess)-predicted Amplitude .

c(C₂H₄)	\hat{A}	Residuen	SEP
100	2,07	0,003	0,0114
200	4,13	0,000	0,0218
300	6,19	-0,001	0,0326
400	8,25	0,001	0,0433
500	10,30	0,005	0,0542
Regressionsparameter)			
	Parameter	Value	Error
	a ₀	0,0092	0,0029
	a ₁	0,0206	0,0000
	r	S _t	SEP
	1,00000	0,00281	0,00305

Tabelle C.143: Ersatzkalibriermittel C₂H₄ (zweiter Alterungsprozess)-Mittelwerte Phase .

c(SO₂)_{Detek.}	$\bar{\varphi}$	S²	S_t
40	117,79	0,000022	0,0047
39	118,16	0,000019	0,0044
38	118,51	0,000017	0,0041
37	118,85	0,000015	0,0038
36	119,18	0,000013	0,0036
35	119,49	0,000011	0,0033
34	119,80	0,000009	0,0030
33	120,09	0,000008	0,0028
32	120,37	0,000006	0,0025
31	120,64	0,000005	0,0023
30	120,90	0,000004	0,0021

Tabelle C.144: Ersatzkalibriermittel C₂H₄ (zweiter Alterungsprozess)-predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\varphi}$	Residuen	SEP
40	117,80	0,008	0,0106
39	118,16	0,003	0,0062
38	118,52	0,001	0,0047
37	118,85	0,001	0,0044
36	119,18	0,002	0,0046
35	119,50	0,003	0,0053
34	119,80	0,005	0,0065
33	120,09	0,006	0,0073
32	120,37	0,005	0,0066
31	120,64	0,003	0,0044
30120,90	-0,001	0,0026	
Regressionsparameter)			
	Parameter	Value	Error
	a ₀	123,2328	0,1194
	a ₁	0,0963	0,0069
	a ₂	-0,0058	0,0001
	r	S _t	SEP
	1,0000	0,00287	0,00443

Ersatzkalibriermittel Graufilter während des ersten Alterungsprozesses

Tabelle C.145: Ersatzkalibriermittel Graufilter (erster Alterungsprozess) .

$c(\text{SO}_2)_{\text{Detek.}}$	A (Graufilter)	A	φ
40	1	-25,0321	57,1141
35	1	-24,3127	50,621
30	1	-22,6352	42,7976
25	1	-18,6908	33,2495
20	1	-7,6235	21,9965
40	2	-25,0323	113,6579
35	2	-24,3129	100,7362
30	2	-22,6353	85,1675
25	2	-18,6912	66,1672
20	2	-7,6231	43,7724
40	3	-25,0326	169,6387
35	3	-24,3129	150,3505
30	3	-22,6355	127,1146
25	3	-18,6914	98,7564
20	3	-7,6226	65,3302
40	4	-25,0323	225,0538
35	4	-24,3126	199,4661
30	4	-22,6353	168,6399
25	4	-18,6912	131,0182
20	4	-7,6232	86,6739
40	5	-25,0324	279,9203
35	5	-24,3129	248,0943
30	5	-22,6353	209,751
25	5	-18,6915	162,9593
20	5	-7,6227	107,8023

Tabelle C.146: Ersatzkalibriermittel Graufilter (erster Alterungsprozess)-
Mittelwerte Amplitude .

A(Graufilter)	A	S²	S_t
1	41,16	155,3082	12,4623
2	81,90	615,0556	24,8003
3	122,24	1370,1607	37,0157
4	162,17	2411,4653	49,1067
5	201,71	3730,6570	61,0791

Tabelle C.147: Ersatzkalibriermittel Graufilter (erster Alterungsprozess)-
predicted Amplitude .

A(Graufilter)	\hat{A}	Residuen	SEP
1	41,56	0,406	68,8207
2	81,70	-0,201	113,5478
3	121,84	-0,402	158,3583
4	161,97	-0,197	203,1969
5	202,11	0,405	248,0487
Regressionsparameter)			
	Parameter	Value	Error
	a ₀	1,4250	0,4548
	a ₁	40,1370	0,1371
	r	S _t	SEP
	0,99998	0,43360	0,37744

Tabelle C.148: Ersatzkalibriermittel Graufilter (erster Alterungsprozess)-
Mittelwerte Phase .

c(SO₂)_{Detek.}	$\hat{\varphi}$	S²	S_t
40	-25,03	0,00000003	0,0002
35	-24,31	0,00000002	0,0001
30	-22,64	0,00000001	0,0001
25	-18,69	0,00000006	0,0002
20	-7,62	0,00000011	0,0003

Tabelle C.149: Ersatzkalibriermittel Graufilter (erster Alterungsprozess)-
predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\varphi}$	Residuen	SEP
40	-24,46	0,569	233,6214
35	-25,34	-1,031	210,8569
30	-22,94	-0,306	179,8432
25	-17,26	1,436	139,1323
20	-8,29	-0,664	88,7991
Regressionsparameter)			
	Parameter	Value	Error
	a_0	-24,4631	1,3281
	a_1	-2,5217	1,5732
	a_2	1,6414	0,3772
	r	S_t	SEP
	0,9806	1,41119	0,99776

Ersatzkalibriermittel Graufilter während des zweiten Alterungsprozesses

Tabelle C.150: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess) .

$c(\text{SO}_2)_{\text{Detek.}}$	A(Graufilter)	A	φ
40	1	57,1141	-25,0321
39	1	56,0218	-25,0374
38	1	54,8905	-25,0324
37	1	53,7266	-25,0164
36	1	52,5243	-24,9875
35	1	51,2768	-24,9425
34	1	49,9906	-24,8804
33	1	48,6592	-24,7977
32	1	47,2752	-24,6898
31	1	45,8447	-24,5541
30	1	44,3617	-24,3854
40	2	113,6579	-25,0323
39	2	111,4817	-25,0371
38	2	109,2319	-25,0324
37	2	106,9166	-25,0166
36	2	104,5238	-24,9876
35	2	102,0411	-24,9426
34	2	99,4802	-24,8802
33	2	96,8321	-24,7978
32	2	94,0775	-24,6898
31	2	91,2313	-24,5542
30	2	88,2811	-24,3857
40	3	169,6387	-25,0326
39	3	166,3907	-25,0375
38	3	163,0321	-25,0326
37	3	159,5733	-25,0165
36	3	156,0041	-24,9877
35	3	152,2983	-24,9427
34	3	148,4764	-24,8804
33	3	144,5224	-24,7977
32	3	140,4111	-24,6897
31	3	136,1651	-24,5544
30	3	131,7594	-24,3855

Tabelle C.151: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess - cont.)

$c(\text{SO}_2)_{\text{Detek.}}$	A(Graufilter)	A	φ
40	4	225,0538	-25,0323
39	4	220,7467	-25,0373
38	4	216,2892	-25,0322
37	4	211,7035	-25,0164
36	4	206,9677	-24,9876
35	4	202,0524	-24,9427
34	4	196,9827	-24,8805
33	4	191,7366	-24,7977
32	4	186,2823	-24,6897
31	4	180,6477	-24,5542
30	4	174,8053	-24,3856
40	5	279,9203	-25,0324
39	5	274,5599	-25,0372
38	5	269,0196	-25,0325
37	5	263,3129	-25,0164
36	5	257,42	-24,9875
35	5	251,3058	-24,9424
34	5	245,0009	-24,8803
33	5	238,4776	-24,7976
32	5	231,6946	-24,6897
31	5	224,6874	-24,5543
30	5	217,4181	-24,3855

Tabelle C.152: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess)-
Mittelwerte Amplitude .

A(Graufilter)	A	S²	S_t
1	51,06	16,2314	4,0288
2	101,61	64,2738	8,0171
3	151,66	143,1995	11,9666
4	201,21	252,0031	15,8746
5	250,26	389,8713	19,7452

Tabelle C.153: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess)-
predicted Amplitude .

A(Graufilter)	\hat{A}	Residuen	SEP
1	51,56	0,498	4,2576
2	101,36	-0,254	8,4126
3	151,16	-0,501	12,5617
4	200,96	-0,246	16,6514
5	250,76	0,504	20,7156
Regressionsparameter)			
	Parameter	Value	Error
	a_0	1,7600	0,5664
	a_1	49,8000	0,1708
	r	S_t	SEP
	0,99998	0,54006	0,46846

Tabelle C.154: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess)-
Mittelwerte Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\varphi}$	S^2	S_t
40	-25,03	0,00000003	0,0002
39	-25,04	0,00000002	0,0001
38	-25,03	0,00000002	0,0001
37	-25,02	0,00000001	0,0001
36	-24,99	0,00000001	0,0001
35	-24,94	0,00000001	0,0001
34	-24,88	0,00000001	0,0001
33	-24,80	0,00000000	0,0001
32	-24,69	0,00000000	0,0000
31	-24,55	0,00000001	0,0001
30	-24,39	0,00000001	0,0001

Tabelle C.155: Ersatzkalibriermittel Graufilter (zweiter Alterungsprozess)-
predicted Phase .

$c(\text{SO}_2)_{\text{Detek.}}$	$\hat{\varphi}$	Residuen	SEP
40	-25,02	0,016	0,0178
39	-25,04	-0,002	0,0024
38	-25,04	-0,011	0,0127
37	-25,03	-0,013	0,0145
36	-25,00	-0,009	0,0098
35	-24,94	-0,002	0,0021
34	-24,87	0,006	0,0072
33	-24,78	0,013	0,0146
32	-24,68	0,013	0,0146
31	-24,55	0,004	0,0048
30	-24,40	-0,019	0,0212
Regressionsparameter)			
	Parameter	Value	Error
	a_0	-25,0164	0,0093
	a_1	-0,0324	0,0043
	a_2	0,0094	0,0004
	r	S_t	SEP
	0,9976	0,01217	0,01182

Meßwerte für SO₂ während des Alterungsprozesses

Tabelle C.156: Datensatz Amplitude SO₂ - beim Alterungsprozeß 7.3 Hz .

	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
Faktor SO ₂	1,3333	1,3	1,2666	1,2333	1,2	1,1666
Faktor C ₂ H ₄	1,0	0,975	0,95	0,925	0,9	0,975
	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
Reingas SO ₂						
c(SO ₂)/ppm	40	39	38	37	36	35
100	256,8359	254,7259	252,4416	249,9874	247,3461	244,5015
250	627,1295	621,9351	616,3142	610,2775	603,7841	596,7877
500	1206,6097	1196,4821	1185,5299	1173,7772	1161,1469	1147,546
750	1742,3916	1727,5712	1711,5616	1694,3965	1675,9613	1656,1232
1000	2238,0139	2218,7358	2197,928	2175,6345	2151,7095	2125,9744
1250	2696,802	2673,2844	2647,9219	2620,7664	2591,6443	2560,3428
1500	3121,7126	3094,1697	3064,4744	3032,7117	2998,6643	2962,1011
1750	3515,4761	3484,092	3450,2927	3414,1543	3375,4482	3333,9014
2000	3880,5811	3845,5452	3807,8428	3767,562	3724,4329	3678,1702
	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
Faktor SO ₂	1,1333	1,1	1,0666	1,0333	1,0	
Faktor C ₂ H ₄	0,85	0,925	0,8	0,775	0,75	
	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
Reingas SO ₂						
c(SO ₂)/ppm	34	33	32	31	30	
100	241,4538	238,1852	234,6725	230,9233	226,9128	
250	589,3022	581,2768	572,6556	563,4569	553,6201	
500	1133,0028	1117,4214	1100,696	1082,8553	1063,7897	
750	1634,9254	1612,2294	1587,8762	1561,9149	1534,1876	
1000	2098,5022	2069,1006	2037,5636	2003,973	1968,1118	
1250	2526,9404	2491,2185	2452,9202	2412,1521	2368,6445	
1500	2923,1025	2881,4126	2836,7471	2789,2205	2738,5217	
1750	3289,6094	3242,2869	3191,6265	3137,7375	3080,2781	
2000	3628,8716	3576,2383	3519,906	3460,0212	3396,2017	

Tabelle C.157: Datensatz Phase SO₂ - beim Alterungsprozeß 7.3 Hz .

	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
Faktor SO ₂	1,3333	1,3	1,2666	1,2333	1,2	1,1666
Faktor C ₂ H ₄	1,0	0,975	0,95	0,925	0,9	0,975
	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
Reingas SO ₂						
c(SO ₂)/ppm	40	39	38	37	36	35
100	-37,8108	-37,9184	-38,0247	-38,1289	-38,2308	-38,3306
250	-37,8162	-37,9232	-38,0289	-38,1324	-38,2337	-38,3327
500	-37,8245	-37,9305	-38,0352	-38,1377	-38,2379	-38,3358
750	-37,8321	-37,9372	-38,0409	-38,1423	-38,2415	-38,3384
1000	-37,8389	-37,943	-38,0458	-38,1462	-38,2444	-38,3402
1250	-37,8451	-37,9483	-38,0501	-38,1496	-38,2467	-38,3415
1500	-37,8507	-37,953	-38,0538	-38,1523	-38,2484	-38,3422
1750	-37,8555	-37,9569	-38,0568	-38,1544	-38,2496	-38,3423
2000	-37,8598	-37,9603	-38,0593	-38,1559	-38,2502	-38,3419
	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
Faktor SO ₂	1,1333	1,1	1,0666	1,0333	1,0	
Faktor C ₂ H ₄	0,85	0,925	0,8	0,775	0,75	
	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
Reingas SO ₂						
c(SO ₂)/ppm	34	33	32	31	30	
100	-38,4272	-38,5204	-38,61	-38,695	-38,7749	
250	-38,4286	-38,521	-38,6099	-38,6942	-38,7733	
500	-38,4305	-38,5219	-38,6095	-38,6925	-38,7703	
750	-38,432	-38,5221	-38,6086	-38,6903	-38,7668	
1000	-38,4327	-38,5217	-38,607	-38,6874	-38,7627	
1250	-38,4329	-38,5208	-38,6049	-38,6842	-38,7581	
1500	-38,4325	-38,5194	-38,6023	-38,6804	-38,7531	
1750	-38,4316	-38,5174	-38,5992	-38,6762	-38,7477	
2000	-38,4302	-38,5149	-38,5956	-38,6714	-38,7418	

Kalibration Mischung SO₂/H₂O während des Alterungsprozesses über Amplitudenmodell

Tabelle C.158: Datensatz Amplitude Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	256,8359	254,7259	252,4416	249,9874	247,3461	244,5015
250	627,1295	621,9351	616,3142	610,2775	603,7841	596,7877
500	1206,6097	1196,4821	1185,5299	1173,7772	1161,1469	1147,546
750	1742,3916	1727,5712	1711,5616	1694,3965	1675,9613	1656,1232
1000	2238,0139	2218,7358	2197,928	2175,6345	2151,7095	2125,9744
1250	2696,802	2673,2844	2647,9219	2620,7664	2591,6443	2560,3428
1500	3121,7126	3094,1697	3064,4744	3032,7117	2998,6643	2962,1011
1750	3515,4761	3484,092	3450,2927	3414,1543	3375,4482	3333,9014
2000	3880,5811	3845,5452	3807,8428	3767,562	3724,4329	3678,1702
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	241,4538	238,1852	234,6725	230,9233	226,9128	
250	589,3022	581,2768	572,6556	563,4569	553,6201	
500	1133,0028	1117,4214	1100,696	1082,8553	1063,7897	
750	1634,9254	1612,2294	1587,8762	1561,9149	1534,1876	
1000	2098,5022	2069,1006	2037,5636	2003,973	1968,1118	
1250	2526,9404	2491,2185	2452,9202	2412,1521	2368,6445	
1500	2923,1025	2881,4126	2836,7471	2789,2205	2738,5217	
1750	3289,6094	3242,2869	3191,6265	3137,7375	3080,2781	
2000	3628,8716	3576,2383	3519,906	3460,0212	3396,2017	

Tabelle C.159: SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	99,59	99,50	99,45	99,44	99,45	99,48
250	250,83	250,61	250,50	250,49	250,56	250,65
500	500,85	500,36	500,12	500,09	500,21	500,40
750	750,37	749,54	749,12	749,07	749,26	749,55
1000	1000,45	999,23	998,61	998,53	998,81	999,24
1250	1251,30	1249,62	1248,77	1248,66	1249,06	1249,67
1500	1502,45	1500,26	1499,15	1499,02	1499,54	1500,36
1750	1753,16	1750,37	1748,98	1748,81	1749,47	1750,50
2000	2002,47	1999,04	1997,32	1997,10	1997,88	1999,12
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	99,51	99,53	99,52	99,48	99,37	
250	250,76	250,84	250,85	250,76	250,52	
500	500,62	500,78	500,78	500,57	500,04	
750	749,90	750,16	750,14	749,78	748,89	
1000	999,76	1000,13	1000,10	999,58	998,28	
1250	1250,39	1250,90	1250,88	1250,17	1248,42	
1500	1501,30	1501,98	1501,96	1501,06	1498,78	
1750	1751,69	1752,54	1752,52	1751,38	1748,54	
2000	2000,55	2001,58	2001,53	2000,12	1996,64	

Tabelle C.160: SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	RSS für die Konzentrationsbestimmung - <i>SEP</i> =1,8995 Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	0,1693	0,2538	0,3065	0,3187	0,3021	0,2729
250	0,6826	0,3691	0,2501	0,2442	0,3096	0,4212
500	0,7218	0,1307	0,0133	0,0080	0,0450	0,1598
750	0,1342	0,2103	0,7715	0,8720	0,5544	0,1999
1000	0,2050	0,5908	1,9266	2,1629	1,4202	0,5705
1250	1,6770	0,1477	1,5097	1,7835	0,8908	0,1095
1500	6,0055	0,0650	0,7197	0,9589	0,2125	0,1263
1750	9,9542	0,1380	1,0364	1,4089	0,2827	0,2476
2000	6,1156	0,9251	7,1817	8,4076	4,4913	0,7686
SEP	2,9152	0,9268	2,1142	2,2983	1,6539	0,9316
mittl.abs.Fehler	1,2730	0,1646	0,8866	0,9763	0,6415	0,1145
mittl.rel.Fehler*	0,0255	0,0033	0,0177	0,0195	0,0128	0,0023
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	0,2404	0,2200	0,2284	0,2743	0,3952	
250	0,5749	0,7059	0,7150	0,5721	0,2665	
500	0,3862	0,6139	0,6108	0,3271	0,0015	
750	0,0091	0,0248	0,0193	0,0491	1,2335	
1000	0,0560	0,0179	0,0109	0,1766	2,9467	
1250	0,1498	0,8185	0,7686	0,0298	2,5072	
1500	1,6986	3,9401	3,8545	1,1170	1,4764	
1750	2,8455	6,4516	6,3593	1,9172	2,1319	
2000	0,3049	2,4849	2,3344	0,0143	11,2946	
SEP	1,4172	2,2404	2,2115	1,1837	2,6993	
mittl.abs.Fehler	0,4985	0,9391	0,9202	0,3218	1,1690	
mittl.rel.Fehler*	0,0100	0,0188	0,0184	0,0064	0,0234	
*rel. Fehler bezogen auf den Meßbereichsendwert von c(SO ₂)=2000 ppm						

Tabelle C.161: Polynomische Regression für $SQ(SO_2)$ bei unterschiedlichen Detektorzuständen: $y = a_f + b_f SQ + c_f SQ^2 + d_f SQ^3$.

Parameter	Konzentration SO_2/C_2H_4 im Detektor in Vol.%					
	40	39	38	37	36	35
a	-2,2473	-2,2740	-2,2997	-2,3268	-2,3561	-2,3882
b	0,3920	0,3954	0,3990	0,4030	0,4074	0,4123
c	1,5148E-05	1,5363E-05	1,5608E-05	1,5879E-05	1,6175E-05	1,6506E-05
d	4,3171E-09	4,4684E-09	4,6359E-09	4,8219E-09	5,0305E-09	5,2644E-09
R ²	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
SD	0,69067	0,69935	0,70668	0,71432	0,72322	0,73304
Parameter	Konzentration SO_2/C_2H_4 im Detektor in Vol.%					
	34	33	32	31	30	
a	-2,4217	-2,4541	-2,4878	-2,5254	-2,5618	
b	0,4176	0,4235	0,4299	0,4371	0,4449	
c	1,6867E-05	1,7277E-05	1,7740E-05	1,8250E-05	1,8829E-05	
d	5,5282E-09	5,8248E-09	6,1618E-09	6,5463E-09	6,9865E-09	
R ²	1,0000	1,0000	1,0000	1,0000	1,0000	
SD	0,74309	0,75199	0,76393	0,77506	0,78530	

Tabelle C.162: Polynomische Regression für die Parameter der Beschreibung von SQ unter Berücksichtigung des Detektorzustands: $p = x + yf + zf^2$.

Parameter	Regression bezüglich des Detektorzustands			
	Regression für a	Regression für b	Regression für c	Regression für d
x	-4,3152	0,8981	5,2892E-05	3,3383E-08
y	0,0786	-0,0225	-1,7173E-06	-1,3456E-09
z	-6,7377E-04	2,4723E-04	1,9359E-08	1,5491E-11
R ²	0,99993	0,99986	0,99969	0,99951
SD	9,45440E-04	2,32690E-04	2,38492E-08	2,18028E-11

Kalibration Mischung SO₂/H₂O während des Alterungsprozesses über Phasenmodell

Tabelle C.163: Datensatz Phase Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	-37,8108	-37,9184	-38,0247	-38,1289	-38,2308	-38,3306
250	-37,8162	-37,9232	-38,0289	-38,1324	-38,2337	-38,3327
500	-37,8245	-37,9305	-38,0352	-38,1377	-38,2379	-38,3358
750	-37,8321	-37,9372	-38,0409	-38,1423	-38,2415	-38,3384
1000	-37,8389	-37,943	-38,0458	-38,1462	-38,2444	-38,3402
1250	-37,8451	-37,9483	-38,0501	-38,1496	-38,2467	-38,3415
1500	-37,8507	-37,953	-38,0538	-38,1523	-38,2484	-38,3422
1750	-37,8555	-37,9569	-38,0568	-38,1544	-38,2496	-38,3423
2000	-37,8598	-37,9603	-38,0593	-38,1559	-38,2502	-38,3419
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	-38,4272	-38,5204	-38,61	-38,695	-38,7749	
250	-38,4286	-38,521	-38,6099	-38,6942	-38,7733	
500	-38,4305	-38,5219	-38,6095	-38,6925	-38,7703	
750	-38,432	-38,5221	-38,6086	-38,6903	-38,7668	
1000	-38,4327	-38,5217	-38,607	-38,6874	-38,7627	
1250	-38,4329	-38,5208	-38,6049	-38,6842	-38,7581	
1500	-38,4325	-38,5194	-38,6023	-38,6804	-38,7531	
1750	-38,4316	-38,5174	-38,5992	-38,6762	-38,7477	
2000	-38,4302	-38,5149	-38,5956	-38,6714	-38,7418	

Tabelle C.164: predicted Phase aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	-37,81	-37,92	-38,03	-38,13	-38,23	-38,33
250	-37,81	-37,92	-38,03	-38,13	-38,24	-38,33
500	-37,82	-37,93	-38,04	-38,14	-38,24	-38,34
750	-37,83	-37,94	-38,04	-38,14	-38,24	-38,34
1000	-37,84	-37,94	-38,05	-38,15	-38,25	-38,34
1250	-37,84	-37,95	-38,05	-38,15	-38,25	-38,34
1500	-37,85	-37,95	-38,06	-38,15	-38,25	-38,34
1750	-37,85	-37,96	-38,06	-38,16	-38,25	-38,34
2000	-37,86	-37,96	-38,06	-38,16	-38,25	-38,34
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	-38,43	-38,52	-38,61	-38,69	-38,78	
250	-38,43	-38,52	-38,61	-38,69	-38,78	
500	-38,43	-38,52	-38,61	-38,69	-38,77	
750	-38,43	-38,52	-38,61	-38,69	-38,77	
1000	-38,43	-38,52	-38,60	-38,69	-38,77	
1250	-38,43	-38,52	-38,60	-38,68	-38,76	
1500	-38,43	-38,52	-38,60	-38,68	-38,76	
1750	-38,43	-38,52	-38,60	-38,68	-38,75	
2000	-38,43	-38,51	-38,59	-38,67	-38,74	

Tabelle C.165: predicted Phase aus der Mischung SO₂/H₂O - beim Alterungspro-
zeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	RSS für die Konzentrationsbestimmung - <i>SEP</i> =1,8995 Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
100	5,7764E-06	2,2098E-07	2,6650E-06	3,5485E-06	2,0276E-06	2,8081E-09
250	5,9614E-06	1,9026E-07	2,5016E-06	3,5900E-06	1,8919E-06	1,5349E-08
500	5,8875E-06	2,3366E-07	2,6380E-06	3,5947E-06	1,9564E-06	1,7547E-08
750	6,0591E-06	1,6591E-07	2,4635E-06	3,7063E-06	1,8884E-06	2,7631E-10
1000	5,8404E-06	2,8461E-07	2,6875E-06	4,0034E-06	2,0108E-06	8,2570E-09
1250	6,0601E-06	2,3759E-07	2,7395E-06	3,7692E-06	2,0918E-06	4,8585E-09
1500	6,5864E-06	1,5575E-07	2,6849E-06	3,8627E-06	2,1758E-06	4,5741E-09
1750	6,2523E-06	2,3105E-07	2,9282E-06	3,9646E-06	2,0177E-06	9,8322E-09
2000	6,4199E-06	2,2185E-07	2,8718E-06	4,1500E-06	1,9559E-06	6,2068E-09
SEP	0,00428	0,00080	0,00284	0,00338	0,00245	0,00015
mittl.abs.Fehler	0,0025	0,0005	0,0016	0,0019	0,0014	0,0001
mittl.rel.Fehler*	0,00012	0,00002	0,00008	0,00010	0,00007	0,00000
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
100	1,2748E-06	3,6949E-06	4,5219E-06	5,5032E-07	7,4621E-06	
250	1,1237E-06	3,1553E-06	4,1004E-06	4,9833E-07	7,7326E-06	
500	1,0056E-06	3,6370E-06	4,3280E-06	5,2230E-07	7,6506E-06	
750	1,3169E-06	3,6801E-06	4,8214E-06	6,0805E-07	7,4508E-06	
1000	1,1678E-06	3,5967E-06	4,6512E-06	4,3718E-07	7,7838E-06	
1250	1,1844E-06	3,7164E-06	4,6169E-06	5,6404E-07	8,2094E-06	
1500	1,1171E-06	3,9944E-06	4,6544E-06	5,3774E-07	8,2579E-06	
1750	1,1508E-06	3,9811E-06	4,7019E-06	6,2744E-07	8,0290E-06	
2000	1,2591E-06	4,0164E-06	4,6969E-06	5,0620E-07	8,1976E-06	
SEP	0,00188	0,00334	0,00370	0,00127	0,00486	
mittl.abs.Fehler	0,0011	0,0019	0,0021	0,0007	0,0028	
mittl.rel.Fehler*	0,00005	0,00010	0,00011	0,00004	0,00014	

*rel. Fehler bezogen auf den Meßbereichsendwert von c(SO₂)=2000 ppm

Tabelle C.166: Polynomische Regression für φ_{SO_2} bei unterschiedlichen Detektorzuständen: $y = a_f + b_f SQ + c_f SQ^2 + d_f SQ^3$.

Parameter	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
a	-37,8071	-37,9151	-38,0218	-38,1264	-38,2287	-38,3290
b	-3,7927E-05	-3,3846E-05	-2,9903E-05	-2,5202E-05	-2,1206E-05	-1,6231E-05
c	6,3588E-09	6,1217E-09	6,1552E-09	5,5496E-09	5,8623E-09	5,1341E-09
d	-2,8667E-13	-2,5062E-13	-2,9114E-13	-1,5728E-13	-3,1265E-13	-1,2061E-13
R ²	1,0000	1,0000	1,0000	1,0000	1,0000	0,9999
SD	3,9779E-05	5,4272E-05	2,9956E-05	2,8435E-05	1,9707E-05	4,3846E-05
Parameter	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
a	-38,4261	-38,5197	-38,6098	-38,6954	-38,7758	
b	-1,1476E-05	-6,5131E-06	-1,7108E-06	3,6494E-06	8,6560E-06	
c	4,9934E-09	4,6151E-09	4,6775E-09	4,4002E-09	4,7236E-09	
d	-1,4204E-13	-7,3043E-14	-1,3165E-13	-1,1439E-13	-2,7838E-13	
R ²	0,9995	0,9997	0,9999	1,0000	1,0000	
SD	5,4079E-05	5,2840E-05	4,9313E-05	4,7883E-05	3,5746E-05	

Tabelle C.167: Polynomische Regression für die Parameter der Beschreibung von φ_{SO_2} unter Berücksichtigung des Detektorzustands: $p = x + yf + zf^2$.

Parameter	Regression bezüglich des Detektorzustands			
	Regression für a	Regression für b	Regression für c	Regression für d
x	-39,9018	2,3040E-04	1,0296E-08	-4,7945E-12
y	-0,0075	-9,4186E-06	-4,9173E-10	2,7790E-13
z	0,0015	6,7723E-08	9,9121E-12	-4,1523E-15
R ²	1,0000	0,9999	0,9123	0,4267
SD	1,9900E-03	1,7392E-07	2,3462E-10	7,4121E-14

Tabelle C.168: Datensatz Amplitude H₂O - beim Alterungsprozeß 7.3 Hz .

Faktor SO ₂ Faktor C ₂ H ₄	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
	1,3333 1,0	1,3 0,975	1,2666 0,95	1,2333 0,925	1,2 0,9	1,1666 0,975
Reingas H ₂ O c(H ₂ O)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
7000	28,812	28,3037	27,7896	27,2707	26,747	26,2198
14000	50,6455	49,7165	48,7696	47,8091	46,8329	45,8382
24500	83,8936	82,4415	80,947	79,4188	77,8486	76,2266
43750	147,2457	144,9615	142,5821	140,1276	137,5742	134,9035
87500	280,8734	276,8986	272,719	268,3632	263,7997	258,9851
131250	395,2837	389,8242	384,0748	378,0656	371,751	365,0752
175000	494,9465	488,1837	481,0469	473,5838	465,7298	457,4155
218750	583,7765	575,845	567,4661	558,699	549,4662	539,6889
262500	664,3847	655,3922	645,8787	635,9234	625,4417	614,3353
306250	738,5167	728,5378	717,9884	706,9446	695,304	682,9783
350000	807,3851	796,5001	784,9846	772,9333	760,2222	746,7587
Faktor SO ₂ Faktor C ₂ H ₄	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
	1,1333 0,85	1,1 0,925	1,0666 0,8	1,0333 0,775	1,0 0,75	
Reingas H ₂ O c(H ₂ O)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
7000	25,6897	25,1574	24,6246	24,0926	23,5631	
14000	44,8296	43,8052	42,7629	41,7082	40,6398	
24500	74,5646	72,8512	71,0776	69,2547	67,3741	
43750	132,1357	129,2456	126,2121	123,0549	119,7477	
87500	253,9473	248,6467	243,0384	237,1589	230,9556	
131250	358,0757	350,6968	342,8749	334,6577	325,9755	
175000	448,6964	439,4998	429,7313	419,4692	408,6304	
218750	529,4304	518,6055	507,1119	495,0329	482,2569	
262500	602,6698	590,373	577,3082	563,5778	549,0673	
306250	670,0441	656,3867	641,8892	626,6365	610,5186	
350000	732,6313	717,7205	701,8819	685,2347	667,6356	

Tabelle C.169: Datensatz Phase H₂O - beim Alterungsprozeß 7.3 Hz .

Faktor SO ₂ Faktor C ₂ H ₄	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
	1,3333	1,3	1,2666	1,2333	1,2	1,1666
	1,0	0,975	0,95	0,925	0,9	0,975
Reingas H ₂ O c(H ₂ O)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
7000	56,1564	56,3421	56,561	56,8048	57,0808	57,4155
14000	37,5421	37,5315	37,5538	37,6012	37,6863	37,8263
24500	19,7681	19,596	19,4496	19,3251	19,2332	19,1886
43750	4,2785	4,0407	3,8239	3,6234	3,4496	3,3106
87500	-7,7678	-7,9925	-8,2012	-8,3955	-8,5705	-8,7205
131250	-12,2966	-12,5022	-12,6945	-12,8734	-13,0354	-13,1757
175000	-14,7521	-14,9456	-15,1265	-15,2952	-15,4479	-15,5804
218750	-16,3349	-16,52	-16,6932	-16,8546	-17,0008	-17,1281
262500	-17,4625	-17,6417	-17,8088	-17,9648	-18,1066	-18,2299
306250	-18,3192	-18,4934	-18,6564	-18,8086	-18,9464	-19,0671
350000	-18,9997	-19,1705	-19,33	-19,4792	-19,6143	-19,7325
Faktor SO ₂ Faktor C ₂ H ₄	Konzentration SO ₂ /C ₂ H ₄ im Detektor als Faktor SO ₂ / Faktor C ₂ H ₄					
	1,1333	1,1	1,0666	1,0333	1,0	
	0,85	0,925	0,8	0,775	0,75	
Reingas H ₂ O c(H ₂ O)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
7000	57,7916	58,2266	58,7453	59,3358	60,0206	
14000	38,0151	38,27	38,6152	39,0431	39,5832	
24500	19,1842	19,2389	19,3707	19,5782	19,8823	
43750	3,2033	3,1402	3,1338	3,1838	3,3079	
87500	-8,8451	-8,9379	-8,9905	-9,0023	-8,9621	
131250	-13,2939	-13,3846	-13,4406	-13,4614	-13,4375	
175000	-15,693	-15,7805	-15,8354	-15,8584	-15,8414	
218750	-17,2364	-17,3209	-17,3755	-17,3997	-17,3857	
262500	-18,3348	-18,4175	-18,4713	-18,4963	-18,4853	
306250	-19,1703	-19,2513	-19,3049	-19,3303	-19,321	
350000	-19,8338	-19,9139	-19,9672	-19,9935	-19,986	

Kalibration Mischung SO₂/H₂O während des Alterungsprozesses über Zeigermodell

Tabelle C.170: Datensatz SQ H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
7000	-28,7420	-28,2246	-27,6999	-27,1690	-26,6316	-26,0877
14000	-49,0055	-48,1270	-47,2369	-46,3372	-45,4277	-44,5083
24500	-70,8378	-69,5592	-68,2651	-66,9584	-65,6392	-64,3082
43750	-98,7471	-96,9642	-95,1614	-93,3409	-91,5045	-89,6523
87500	-140,7307	-138,2346	-135,7108	-133,1619	-130,5902	-127,9940
131250	-170,4260	-167,4490	-164,4371	-161,3965	-158,3261	-155,2265
175000	-194,0665	-190,7142	-187,3219	-183,8962	-180,4378	-176,9466
218750	-213,9754	-210,3110	-206,6011	-202,8557	-199,0741	-195,2554
262500	-231,3096	-227,3737	-223,3927	-219,3710	-215,3081	-211,2081
306250	-246,7391	-242,5653	-238,3408	-234,0726	-229,7644	-225,4115
350000	-260,6911	-256,2992	-251,8574	-247,3681	-242,8358	-238,2588
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
7000	-25,5383	-24,9832	-24,4222	-23,8569	-23,2869	
14000	-43,5811	-42,6461	-41,7036	-40,7553	-40,8481	
24500	-62,9675	-61,6183	-60,2614	-58,8998	-59,1397	
43750	-87,7874	-85,9110	-84,0243	-82,1314	-82,4497	
87500	-125,3806	-122,7494	-120,1012	-117,4430	-117,8579	
131250	-152,1051	-148,9615	-145,7976	-142,6191	-143,1427	
175000	-173,4287	-169,8850	-166,3191	-162,7355	-163,3577	
218750	-191,4080	-187,5327	-183,6296	-179,7091	-180,4273	
262500	-207,0752	-202,9114	-198,7188	-194,5052	-195,3011	
306250	-221,0247	-216,6066	-212,1573	-207,6848	-208,5569	
350000	-233,6449	-228,9958	-224,3135	-219,6075	-220,5446	

Tabelle C.171: H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
7000	6897,32	6894,10	6890,41	6886,79	6883,18	6879,55
14000	14028,26	14031,57	14033,68	14035,71	14037,76	14039,60
24500	24667,90	24674,53	24678,57	24682,58	24686,87	24691,66
43750	43812,24	43815,93	43814,77	43812,47	43811,36	43810,95
87500	87310,03	87315,27	87309,30	87300,54	87294,36	87287,47
131250	131088,15	131102,41	131096,16	131088,82	131082,27	131076,23
175000	174979,76	175003,15	174997,91	174989,54	174985,38	174983,81
218750	218863,08	218895,53	218887,81	218879,68	218876,64	218875,02
262500	262659,11	262694,85	262692,27	262682,97	262674,00	262676,05
306250	306313,83	306358,44	306349,86	306332,02	306327,55	306319,61
350000	349787,75	349827,97	349818,32	349793,52	349781,05	349774,11
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
7000	6876,19	6872,80	6869,16	6865,47	6861,35	
14000	14041,76	14043,70	14044,78	14044,89	14582,41	
24500	24697,45	24703,73	24709,45	24714,68	25855,95	
43750	43812,66	43815,00	43815,79	43814,92	46042,38	
87500	87286,89	87286,41	87279,91	87268,54	92090,12	
131250	131079,46	131083,00	131079,06	131064,46	138668,44	
175000	174991,71	175000,11	175001,70	174987,98	185467,07	
218750	218888,38	218905,07	218904,97	218892,69	232321,66	
262500	262691,50	262709,49	262711,88	262693,66	279076,43	
306250	306331,87	306352,84	306355,18	306331,33	325703,57	
350000	349786,82	349802,74	349796,30	349763,92	372114,25	

Tabelle C.172: H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Reingas SO ₂ c(SO ₂)/ppm	RSS für die Konzentrationsbestimmung - <i>SEP</i> =1780,47982 Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
7000	10542,5023	11214,2097	12008,9157	12816,2207	13646,6022	14507,5245
14000	798,4223	996,9022	1134,4742	1274,8900	1425,6151	1568,4048
24500	28191,6076	30462,2555	31885,5167	33335,9060	34921,0261	36732,4089
43750	3873,3295	4346,6222	4194,9339	3902,0482	3764,8664	3714,8355
87500	36090,1312	34123,5023	36365,3357	39784,0542	42287,3173	45169,0045
131250	26194,5267	21782,6042	23668,2485	25977,3978	28132,0996	30195,4366
175000	409,6145	9,9202	4,3621	109,4107	213,7777	261,9923
218750	12787,8961	21178,4753	18992,6971	16816,5636	16036,5628	15630,0489
262500	25317,1155	37965,6417	36966,7953	33478,0774	30275,0240	30994,8475
306250	4074,4799	11758,5473	9971,4324	6726,6009	6013,3170	4845,6739
350000	45049,0741	29596,0160	33008,0457	42632,6046	47939,4790	51024,0703
SEP	196,6361	201,7100	204,0592	208,2565	211,9697	216,6307
mittl.abs.Fehler	116,4918	121,2951	122,2592	124,1998	126,1747	128,3374
mittl.rel.Fehler*	0,0333	0,0347	0,0349	0,0355	0,0360	0,0367
Reingas SO ₂ c(SO ₂)/ppm	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
7000	15329,2884	16179,2559	17118,9040	18097,2381	19224,7181	
14000	1744,0630	1909,4240	2005,6642	2015,0396	339203,9288	
24500	38986,5248	41504,1269	43870,2486	46087,3427	1838599,3246	
43750	3926,0423	4225,5542	4328,5938	4214,4874	5254987,8836	
87500	45414,2726	45621,6990	48441,7336	53572,9007	21069211,7448	
131250	29085,1850	27888,1293	29221,3157	34425,5627	55033287,4071	
175000	68,7639	0,0126	2,8834	144,5301	109559539,1093	
218750	19149,7899	24045,7596	24016,2660	20359,9244	184189832,2960	
262500	36670,9510	43885,9631	44892,2372	37502,8454	274778069,0842	
306250	6702,9935	10575,3254	11061,9021	6613,9707	378441303,6741	
350000	45444,1370	38910,0153	41493,2355	55733,8570	489039943,9397	
SEP	220,2372	225,7190	230,8476	236,1219	17433,0904	
mittl.abs.Fehler	131,1411	134,9978	138,1207	140,1624	8960,0842	
mittl.rel.Fehler*	0,0375	0,0386	0,0395	0,0400	2,5600	

*rel. Fehler bezogen auf den Meßbereichsendwert von c(H₂O)=350000 ppm

Tabelle C.173: Polynomische Regression für SQ(H₂O) bei unterschiedlichen Detektorzuständen: $y = a_f + b_f SQ + c_f SQ^2 + d_f SQ^3$.

Parameter	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	40	39	38	37	36	35
a	208,9098224	209,837502	217,1480989	219,0697976	226,0018541	232,259561
b	-178,4121679	-181,0867811	-183,6597453	-186,5860507	-189,4718135	-192,5453471
c	1,570755981	1,647225011	1,731755091	1,820455392	1,917830897	2,022508448
d	-0,011082348	-0,011580819	-0,012110715	-0,012686259	-0,013300787	-0,013964405
R ²	1,00000	1,00000	1,00000	1,00000	1,00000	1,00000
SD	165,60822	169,62962	172,13	175,991	178,9209	182,64121
Parameter	Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
	34	33	32	31	30	
a	239,7968013	248,75439	259,6777233	273,6923214	727,8892927	
b	-195,7536803	-199,0839529	-202,5375976	-206,0668276	-191,2777249	
c	2,135343056	2,257653752	2,390244543	2,53444696	2,64926391	
d	-0,014680582	-0,015452465	-0,016286485	-0,017186048	-0,016590752	
R ²	1,00000	1,00000	1,00000	1,00000	1,00000	
SD	186,11896	190,43598	194,82987	199,37146	228,9837	

Tabelle C.174: Polynomische Regression für die Parameter der Beschreibung von SQ unter Berücksichtigung des Detektorzustands: $p = x + yf + zf^2$.

Parameter	Regression bezüglich des Detektorzustands			
	Regression für a	Regression für b	Regression für c	Regression für d
w	2948,7193	-379,9884	16,5002	-0,1015
x	-195,5735	7,6383	-0,8726	0,0052
y	4,7247	-0,0670	0,0175	-0,0001
z	-0,0387	4,9320E-05	-1,2578E-04	7,3077E-07
R ²	0,9981	1,0000	1,0000	1,0000
SD	1,17846	4,5240E-02	5,3135E-04	1,1150E-06

Kalibration Mischung $\text{SO}_2/\text{H}_2\text{O}$ während des Alterungsprozesses über Zeigermodell

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Tabelle C.175: SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozess 7.3 Hz .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
c(SO ₂)/ppm	c(H ₂ O)/ppm	40	39	38	37	36	35
100	7000	99,17288215	99,45522142	99,78109352	100,3272749	100,7201766	101,1553214
1000	175000	999,5594635	999,1967541	999,0255532	998,8329399	998,6900281	998,6306328
2000	350000	1997,889323	1995,873668	1993,924721	1992,468032	1991,189943	1990,070859
100	350000	101,3319057	100,5530356	100,4569662	100,988257	100,8631112	100,7465979
2000	7000	2000,404652	2000,350972	2000,637817	2001,075186	2001,819358	2002,85008
500	87500	500,8867893	501,1001585	501,4055095	501,6998593	502,0390597	502,4285889
500	262500	500,9582926	500,7198503	500,5512717	500,3476122	498,6988232	498,5406395
1500	87500	1501,166493	1500,818904	1500,869581	1500,941661	1501,177386	1501,569241
1500	262500	1501,45897	1499,111293	1498,330104	1497,569641	1496,865458	1496,299691
1000	7000	999,3937912	999,5234647	999,873087	1000,257035	1000,746265	1001,369419
1000	350000	999,5222196	998,6267683	997,8953117	997,1030395	996,3467882	994,1529464
100	175000	100,188311	100,3785701	100,5974817	100,8128974	101,0422876	101,2944235
2000	175000	1998,737456	1997,658325	1997,01601	1996,430957	1996,064094	1995,89057
250	43750	250,586894	250,9498348	251,3715334	252,1834953	252,6582333	253,1843312
1750	306250	1751,332114	1749,794997	1747,264387	1746,168499	1745,199319	1744,347792
750	131250	749,9767449	749,9330663	750,0151776	750,0867894	750,1984463	750,3826275
1250	218750	1249,767025	1249,060402	1248,592928	1248,104995	1247,699039	1247,392603
250	306250	250,6183166	250,4755718	250,3646354	250,4776334	250,3402021	250,2286974
1750	43750	1751,211737	1750,909224	1751,109049	1751,404424	1751,913562	1752,660893
750	218750	749,9663368	749,652395	749,4532226	749,2210957	749,0242769	748,8722559
1250	131250	1249,895755	1249,530171	1249,430737	1249,341715	1249,349834	1249,466498
500	175000	500,866811	500,8438312	500,906415	500,9389798	501,0008259	501,0971774
1500	175000	1501,339907	1499,615881	1499,231447	1498,827801	1498,577791	1498,441994
1000	87500	999,6028798	999,5647635	999,7336643	999,9041875	1000,150302	1000,493729
1000	262500	999,5575361	998,9145226	998,4317674	997,9170874	997,4420253	997,0401911
100	87500	99,90491912	100,6812832	101,0679178	101,4690013	101,8960915	102,3537073
2000	87500	1999,081885	1998,308513	1998,18099	1998,385792	1998,615878	1999,071857
100	262500	100,6598073	100,6884987	100,7358999	100,7692353	100,8146816	100,8696298
2000	262500	1998,557681	1996,905257	1995,801682	1994,781297	1993,885843	1993,211572
250	131250	251,0245003	251,2382231	251,5029094	252,3999998	252,3669205	252,6890124
1750	131250	1751,119307	1750,369248	1750,08074	1749,849636	1749,801262	1750,102363
250	218750	250,6055645	250,6291366	250,6979916	250,8851701	250,948097	251,0382073
1750	218750	1751,323511	1750,141275	1749,415502	1747,631465	1747,076451	1746,684989
500	7000	500,4260507	500,6806133	501,0372078	501,4131516	501,8420932	502,3514495
1500	7000	1500,755657	1500,695534	1501,427775	1501,855551	1502,46498	1503,292666
500	350000	501,0625127	500,6362721	500,2776675	498,5023609	498,0985272	497,7148987
1500	350000	1501,681203	1498,827676	1497,739738	1496,619781	1495,702576	1494,758775
750	43750	749,8384951	750,050006	750,4049687	750,7730961	751,1981605	751,7201743
1250	43750	1249,976193	1249,98109	1250,272271	1250,591408	1251,037729	1251,636706
750	306250	750,0008882	749,4557711	749,0156063	748,5247018	748,0521499	746,1267773
1250	306250	1249,70007	1248,695441	1247,92485	1247,112151	1246,370674	1245,689134
250	14000	250,5482638	250,8631171	251,24143	251,6406747	252,1574356	252,6521769
750	14000	749,694116	749,9058951	750,2739439	750,6564904	751,1137555	751,6744545
1250	14000	1249,913743	1249,961225	1250,313905	1250,70557	1251,239904	1251,941824
1750	14000	1751,049327	1750,841608	1751,156899	1751,571921	1752,221403	1753,703506
100	24500	99,30814465	99,66450104	100,3679713	100,7926152	101,2553604	101,7561608
500	24500	500,5322058	500,8281253	501,2256386	501,6364272	502,0976062	502,6346701
1000	24500	999,5617145	999,6973304	1000,053974	1000,43991	1000,91803	1001,523653
1500	24500	1500,853371	1500,76795	1501,095392	1501,485312	1502,040596	1502,809148
2000	24500	1999,449004	1999,04502	1999,25036	2000,146599	2000,805991	2001,715786
250	7000	250,5324366	250,8178376	251,1670945	251,538487	251,9539151	252,5430346
750	7000	749,6572739	749,8572129	750,2139072	750,5849154	751,037221	751,5881055
1250	7000	1249,890536	1249,934852	1250,29266	1250,692034	1251,1525042	1252,497407
1750	7000	1751,085351	1750,890737	1751,551655	1751,991438	1752,663943	1753,600561
250	350000	250,3173612	250,1041023	249,9198688	249,6968812	249,4791149	249,2700785
750	350000	750,008407	749,3523798	748,8128541	748,2120269	746,1530706	745,595335
1250	350000	1249,754708	1248,609073	1247,697244	1246,729422	1245,837018	1244,998544
1750	350000	1751,602088	1749,898029	1747,194742	1746,03282	1744,875992	1743,849822

Tabelle C.176: SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozess 7.3 Hz cont. .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol. %				
c(SO ₂)/ppm	c(H ₂ O)/ppm	34	33	32	31	30
100	7000	101,6220041	102,1250672	102,6702988	103,247979	103,8631476
1000	175000	998,4954623	998,3050891	998,101964	997,742456	997,2357675
2000	350000	1987,424785	1985,823533	1984,026841	1981,710294	1977,204583
100	350000	99,98024995	99,83699621	99,68997001	99,51693635	100,2155206
2000	7000	2004,752432	2005,657194	2006,601246	2008,428498	2008,758432
500	87500	502,8195116	503,2112175	503,6253287	504,0088548	504,3783461
500	262500	498,3356179	498,1067284	497,8669203	497,5589263	497,1889103
1500	87500	1501,879316	1502,121686	1502,337416	1502,308355	1502,062423
1500	262500	1495,597852	1494,750159	1493,787458	1491,249906	1489,739041
1000	7000	1001,97337	1002,597102	1003,293934	1004,399423	1004,988934
1000	350000	993,3421998	992,4388874	991,4755697	990,3173067	988,9827209
100	175000	101,5511496	101,8140344	102,0834493	102,3526992	102,6260939
2000	175000	1995,560541	1995,05115	1994,431145	1993,307852	1991,764207
250	43750	253,7246345	254,2898365	254,8918087	255,5041759	256,1312334
1750	306250	1743,331412	1742,122997	1739,432706	1737,654747	1735,348387
750	131250	750,5214852	750,6402233	750,7628469	750,8018504	750,7770563
1250	218750	1246,973358	1246,459137	1245,907763	1243,881884	1242,900199
250	306250	250,0899133	249,9308078	249,7718347	249,8262583	249,3309236
1750	43750	1753,325777	1753,908416	1754,480287	1754,859855	1754,895222
750	218750	748,6577529	748,4094776	748,1456541	746,5532564	746,0907193
1250	131250	1249,50423	1249,473478	1249,426986	1249,181086	1248,768492
500	175000	501,1749667	501,2294458	501,2907057	501,3007076	501,2705097
1500	175000	1498,189951	1497,827557	1497,414627	1496,704876	1495,76687
1000	87500	1000,804414	1001,075833	1001,366934	1001,533662	1001,610422
1000	262500	996,5362417	994,5171531	993,9011167	993,099379	992,1568828
100	87500	102,4471029	102,941864	103,4610763	104,3760324	104,9209586
2000	87500	1999,396943	1999,60681	1999,726642	1999,450363	1998,742793
100	262500	100,9127893	100,9590004	101,0073398	101,0351798	100,7687003
2000	262500	1992,328432	1991,234197	1989,957061	1986,8085	1984,549901
250	131250	253,0109573	253,3381619	253,6860452	254,0190362	254,3440598
1750	131250	1750,112452	1749,989499	1749,807898	1749,267644	1747,606237
250	218750	251,1114086	252,0094683	252,0835278	252,1252304	252,1507271
1750	218750	1746,135287	1745,408695	1744,589985	1743,371968	1741,789731
500	7000	502,8752645	503,4233487	504,0363363	504,6495829	505,2823513
1500	7000	1504,065726	1504,8355	1505,670547	1506,314911	1507,62193
500	350000	497,2840533	496,8013699	496,308794	495,7283733	495,0757517
1500	350000	1493,644893	1490,921077	1489,554229	1487,829532	1485,89746
750	43750	752,2231014	752,7755366	753,3223782	753,825362	754,2945439
1250	43750	1252,543941	1253,070586	1253,619645	1254,017382	1254,299574
750	306250	745,6240264	745,0634509	744,4783017	743,515987	742,9317156
1250	306250	1243,464695	1242,553762	1241,551142	1240,311015	1238,830561
250	14000	253,1702493	253,7209721	254,3162751	254,9305318	255,3615877
750	14000	752,2272589	752,801547	753,4346033	754,0298069	754,6180453
1250	14000	1252,558986	1253,222562	1253,942742	1254,526415	1255,02641
1750	14000	1754,548649	1755,343076	1756,068624	1756,630741	1757,672701
100	24500	102,2851649	102,8460626	103,4428833	104,06478	104,7180864
500	24500	503,1757741	503,7387754	504,3527918	504,9531213	505,5631427
1000	24500	1002,09922	1002,680927	1003,313893	1003,862384	1004,405224
1500	24500	1503,512202	1504,556099	1505,263012	1505,777503	1506,126759
2000	24500	2002,569346	2003,336096	2004,491543	2004,903777	2005,007736
250	7000	253,0383272	253,5695839	254,1490007	254,7516571	255,3890933
750	7000	752,1459728	752,7211172	753,3656373	753,9767263	754,5892432
1250	7000	1253,178827	1253,870446	1254,634599	1255,271598	1255,833111
1750	7000	1754,473035	1756,784348	1757,684562	1758,325344	1758,771519
250	350000	249,0384696	248,7824972	248,5144214	248,204614	247,8638444
750	350000	744,9664879	744,2892067	743,5553247	742,6891318	741,702124
1250	350000	1242,614623	1241,437487	1240,26742	1238,919197	1237,224178
1750	350000	1742,609128	1739,714455	1738,143465	1736,268161	1733,811688

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Tabelle C.177: Residuen für die SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
c(SO ₂)/ppm	c(H ₂ O)/ppm	40	39	38	37	36	35
100	7000	0,827117851	0,54477858	0,218906481	0,327274926	0,720176609	1,155321403
1000	175000	0,440536519	0,803245939	0,974446811	1,167060119	1,309971922	1,369367185
2000	350000	2,110676666	4,126332372	6,075279012	7,531968303	8,810056937	9,929141332
100	350000	1,331905678	0,553035576	0,456966198	0,988256955	0,86311118	0,746597925
2000	7000	0,404652006	0,350972237	0,637817214	1,07518581	1,819358413	2,850080218
500	87500	0,886789293	1,100158541	1,40550955	1,699859287	2,039059661	2,428588891
500	262500	0,958292555	0,719850315	0,55127168	0,347612227	1,301176821	1,459360476
1500	87500	1,166492694	0,818904302	0,86958078	0,94166114	1,177386097	1,569240824
1500	262500	1,458969714	0,888706642	1,669895892	2,43035874	3,134541911	3,700308532
1000	7000	0,606208775	0,47653526	0,126912999	0,257035249	0,746265042	1,36941949
1000	350000	0,477780353	1,373231688	2,104688311	2,896960494	3,653211796	5,847053622
100	175000	0,188310994	0,378570148	0,597481714	0,812897364	1,042287602	1,294423451
2000	175000	1,262543771	2,34167529	2,983989532	3,569042611	3,935905986	4,109430229
250	43750	0,586893995	0,949834842	1,37153342	2,183495282	2,658233278	3,184331184
1750	306250	1,332114374	0,205003232	2,735613047	3,83150146	4,800681246	5,652207794
750	131250	0,023255134	0,066933685	0,015177607	0,086789432	0,198446302	0,382627547
1250	218750	0,232975492	0,939598044	1,407071963	1,895005137	2,300961487	2,607396545
250	306250	0,618316551	0,475571765	0,364635437	0,47763343	0,34020211	0,228697388
1750	43750	1,211736639	0,909224195	1,10904852	1,40442409	1,913562246	2,660892881
750	218750	0,033663208	0,347605033	0,546777416	0,778904322	0,975723054	1,127744093
1250	131250	0,104245219	0,469829053	0,569263478	0,658285094	0,650166174	0,533502157
500	175000	0,866810986	0,843831178	0,906414981	0,938979826	1,000825935	1,097177393
1500	175000	1,339907023	0,384119072	0,768552652	1,17219868	1,42208963	1,558005621
1000	87500	0,397120223	0,435236464	0,266335735	0,095812527	0,15030185	0,493729118
1000	262500	0,44246386	1,085477355	1,568232572	2,08291258	2,557974745	2,959808853
100	87500	0,095080877	0,681283183	1,067917842	1,469001313	1,896091476	2,353707303
2000	87500	0,91811453	1,691486624	1,819010035	1,614207949	1,384121624	0,928143181
100	262500	0,659807296	0,688498736	0,73589985	0,76923532	0,814681591	0,869629807
2000	262500	1,442318777	3,094743069	4,198317645	5,218702792	6,114157008	6,788428088
250	131250	1,024500347	1,238223081	1,502909392	2,39999983	2,366920498	2,689012444
1750	131250	1,119307112	0,369247986	0,080739724	0,150363998	0,198737987	0,102362601
250	218750	0,605564508	0,629136594	0,697991593	0,885170125	0,948096959	1,03820734
1750	218750	1,323510906	0,141274898	0,584497996	2,368535171	2,923549243	3,315010708
500	7000	0,426050718	0,680613334	1,037207792	1,413151638	1,842093173	2,351449521
1500	7000	0,755657155	0,69553431	1,427775383	1,855550521	2,464979565	3,292666299
500	350000	1,062512683	0,636272088	0,277667508	1,497639144	1,901472773	2,28510126
1500	350000	1,681203077	1,172323996	2,260261727	3,380219244	4,297423638	5,241225117
750	43750	0,161504901	0,050005965	0,404968746	0,773096121	1,198160513	1,720174318
1250	43750	0,023806609	0,018909891	0,272271056	0,591408029	1,037728638	1,636705526
750	306250	0,000888226	0,544228881	0,984393686	1,47529818	1,947850127	3,873222657
1250	306250	0,29993005	1,304559496	2,075150132	2,887849265	3,629326226	4,310865923
250	14000	0,548263822	0,86311714	1,24142997	1,640674713	2,157435553	2,652176895
750	14000	0,305884018	0,094104865	0,273943907	0,656490382	1,113755532	1,674454461
1250	14000	0,086256546	0,038774694	0,313905119	0,705569752	1,239903523	1,941824344
1750	14000	1,049326607	0,841608485	1,156899369	1,571921211	2,221403231	3,703506236
100	24500	0,691855348	0,335498956	0,367971317	0,792615189	1,255360405	1,756160832
500	24500	0,532205827	0,828125349	1,225638627	1,636427202	2,097606226	2,63467011
1000	24500	0,438285472	0,302669624	0,053973786	0,439910288	0,918029886	1,523652631
1500	24500	0,853371453	0,767949828	1,095392051	1,485311726	2,040595836	2,809148076
2000	24500	0,550996154	0,954980097	0,749639577	0,146598775	0,805991415	1,715786464
250	7000	0,532436562	0,817837606	1,167094509	1,538487021	1,953915071	2,543034587
750	7000	0,342726062	0,142787099	0,213907235	0,584915416	1,037221024	1,588105531
1250	7000	0,109463818	0,065147632	0,292660171	0,692033826	1,525042472	2,497407101
1750	7000	1,085351379	0,890737117	1,551655377	1,991438341	2,663943441	3,600561476
250	350000	0,317361242	0,104102332	0,080131247	0,303118834	0,520885077	0,729921459
750	350000	0,008406954	0,647620233	1,187145919	1,787973141	3,846929446	4,404664993
1250	350000	0,24529227	1,390926908	2,302756246	3,270578085	4,162982401	5,001455509
1750	350000	1,602088198	0,101971477	2,80525819	3,967179795	5,124008284	6,150178483

Tabelle C.178: Residuen für die SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz cont. .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol. %				
c(SO ₂)/ppm	c(H ₂ O)/ppm	34	33	32	31	30
100	7000	1,622004113	2,125067194	2,670298849	3,247979024	3,863147618
1000	175000	1,504537676	1,694910922	1,898035967	2,257544045	2,764232476
2000	350000	12,57521458	14,17646682	15,97315856	18,28970576	22,79541656
100	350000	0,01975005	0,163003794	0,310029986	0,483063646	0,215520626
2000	7000	4,752431965	5,657194361	6,601246436	8,42849775	8,758431919
500	87500	2,819511624	3,211217471	3,62532875	4,008854815	4,37834612
500	262500	1,664382139	1,893271596	2,133079707	2,441073702	2,811089651
1500	87500	1,879316263	2,121686301	2,33741636	2,308354752	2,062423101
1500	262500	4,402148463	5,249841019	6,212542308	8,750093966	10,26095884
1000	7000	1,973370033	2,597101691	3,293933801	4,39942338	4,988934414
1000	350000	6,657800211	7,561112619	8,524430333	9,682693343	11,01727908
100	175000	1,551149618	1,814034436	2,083449344	2,352699171	2,626093889
2000	175000	4,439459419	4,948849821	5,568854771	6,692148041	8,235792789
250	43750	3,724634499	4,289836497	4,891808677	5,504175893	6,131233398
1750	306250	6,668587906	7,877002838	10,56729447	12,34525282	14,65161336
750	131250	0,521485212	0,640223282	0,762846894	0,801850407	0,77705626
1250	218750	3,02664222	3,540862739	4,092236996	6,118116185	7,099800677
250	306250	0,089913304	0,069192228	0,228165254	0,173741705	0,669076447
1750	43750	3,325777336	3,908416465	4,480287358	4,859854835	4,895222209
750	218750	1,342247137	1,590522355	1,854345862	3,446743567	3,90928068
1250	131250	0,495769562	0,526522	0,573014315	0,818913659	1,231508436
500	175000	1,174966746	1,229445845	1,290705695	1,300707619	1,270509679
1500	175000	1,810049341	2,172443264	2,585373185	3,295123782	4,23313047
1000	87500	0,804414282	1,07583272	1,366933761	1,533662158	1,610421955
1000	262500	3,463758318	5,482846938	6,098883333	6,900621006	7,843117231
100	87500	2,447102923	2,941863964	3,461076332	4,376032445	4,920958589
2000	87500	0,603057484	0,393189681	0,273358495	0,549637238	1,257206666
100	262500	0,912789289	0,959000374	1,007339764	1,035179813	0,768700264
2000	262500	7,671568486	8,765802776	10,04293878	13,19149959	15,45009881
250	131250	3,010957329	3,338161906	3,686045167	4,019036211	4,344059754
1750	131250	0,112451786	0,010501398	0,192102407	0,732356217	2,3937628
250	218750	1,111408584	2,009468288	2,083527817	2,125230425	2,150727111
1750	218750	3,864712882	4,591305269	5,410015171	6,628031652	8,210268649
500	7000	2,875264513	3,423348687	4,036336336	4,64958293	5,282351312
1500	7000	4,065725644	4,835499504	5,6705471	6,314910937	7,621930036
500	350000	2,715946663	3,198630054	3,691206029	4,271626727	4,924248306
1500	350000	6,355107259	9,078923288	10,44577134	12,17046803	14,10254044
750	43750	2,223101377	2,77536636	3,322378218	3,825362028	4,294543887
1250	43750	2,543940641	3,070585805	3,619644853	4,017382342	4,299574028
750	306250	4,37597363	4,936549075	5,521698262	6,48401301	7,068284401
1250	306250	6,535304597	7,446237881	8,448857786	9,688985143	11,16943907
250	14000	3,170249307	3,720972125	4,316275116	4,930531804	5,361587737
750	14000	2,227258918	2,801546973	3,434603317	4,029806866	4,618045251
1250	14000	2,558986323	3,222562034	3,942741598	4,526415097	5,026409837
1750	14000	4,54864937	5,343075597	6,068624233	6,630740652	7,672701227
100	24500	2,285164894	2,846062557	3,442883302	4,064780005	4,71808644
500	24500	3,175774132	3,738775387	4,352791826	4,953121343	5,563142686
1000	24500	2,099220303	2,680926582	3,313893229	3,86238381	4,405223645
1500	24500	3,512202471	4,556098649	5,263012065	5,77750265	6,126759322
2000	24500	2,569345843	3,336096383	4,491542899	4,903776687	5,007735532
250	7000	3,038327235	3,569583859	4,149000693	4,751657083	5,389093326
750	7000	2,145972827	2,72111724	3,365637288	3,976726266	4,589243209
1250	7000	3,178827098	3,870445995	4,634599062	5,27159757	5,833111051
1750	7000	4,473034823	6,784347588	7,684561615	8,32534359	8,771518926
250	350000	0,961530425	1,217502752	1,485578557	1,795385956	2,136155639
750	350000	5,033512068	5,710793254	6,444675345	7,310868242	8,297876038
1250	350000	7,385377089	8,562512979	9,732580323	11,08080309	12,77582236
1750	350000	7,390872023	10,28554519	11,85653451	13,73183855	16,18831173

D Tabellen

Tabelle C.179: RSS für die SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Meßgaskonz.		RSS für die Konzentrationsbestimmung - SEP=3,8022 Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
c(SO ₂)/ppm	c(H ₂ O)/ppm	40	39	38	37	36	35
100	7000	0,684123939	0,296783701	0,047920047	0,107108877	0,518654348	1,334767544
1000	175000	0,194072424	0,645204039	0,949546588	1,362029321	1,716026436	1,875166487
2000	350000	4,45495599	17,02661884	36,90901507	56,73054652	77,61710323	98,58784759
100	350000	1,773972735	0,305848348	0,208818106	0,976651808	0,74496091	0,557408462
2000	7000	0,163743246	0,123181511	0,406810799	1,156024527	3,310065036	8,122957249
500	87500	0,786395249	1,210348814	1,975457095	2,889521597	4,1577643	5,898044
500	262500	0,918324621	0,518184476	0,303900465	0,120834261	1,693061118	2,129732998
1500	87500	1,360705205	0,670604256	0,756170734	0,886725702	1,386238022	2,462516763
1500	262500	2,128592628	0,789799496	2,78855229	5,906643607	9,825352991	13,69228323
1000	7000	0,367489079	0,227085854	0,016106909	0,066067119	0,556911514	1,875309739
1000	350000	0,228274065	1,885765268	4,429712885	8,392380106	13,34595642	34,18803606
100	175000	0,03546103	0,143315357	0,356984398	0,660802125	1,086363445	1,67553207
2000	175000	1,594016774	5,483443164	8,90419353	12,73806516	15,49135593	16,88741681
250	43750	0,344444562	0,902186227	1,881103923	4,767651648	7,066204159	10,13996509
1750	306250	1,774528706	0,042026325	7,483578745	14,68040344	23,04654043	31,94745294
750	131250	0,000540801	0,004480118	0,00023036	0,007532405	0,039380935	0,14640384
1250	218750	0,05427758	0,882844484	1,97985151	3,591044471	5,294423766	6,798516742
250	306250	0,382315357	0,226168503	0,132959002	0,228133694	0,115737476	0,052302495
1750	43750	1,468305683	0,826688637	1,22998862	1,972407026	3,661720469	7,080350925
750	218750	0,001133212	0,120829259	0,298965542	0,606691943	0,952035478	1,271806738
1250	131250	0,010867066	0,220739339	0,324060908	0,433339265	0,422716054	0,284624551
500	175000	0,751361286	0,712051056	0,821588117	0,881683114	1,001652553	1,203798231
1500	175000	1,795350831	0,147547461	0,590673178	1,374049746	2,022338917	2,427381516
1000	87500	0,157704471	0,18943078	0,070934724	0,00918004	0,022590646	0,243768442
1000	262500	0,195774267	1,178261088	2,459353399	4,338524817	6,543234798	8,760468447
100	87500	0,009040373	0,464146776	1,140448517	2,157964857	3,595162884	5,539938069
2000	87500	0,84293429	2,861126999	3,308797508	2,605667304	1,91579267	0,861449765
100	262500	0,435345668	0,474030509	0,54154859	0,591722977	0,663706094	0,756256001
2000	262500	2,080283455	9,577434666	17,62587105	27,23485883	37,38291592	46,0827559
250	131250	1,049600961	1,5331964	2,258736639	5,759999183	5,602312642	7,230787921
1750	131250	1,252848411	0,136344075	0,006518903	0,022609332	0,039496787	0,010478102
250	218750	0,366708374	0,395812854	0,487192264	0,783526149	0,898887843	1,077874482
1750	218750	1,751681117	0,019958597	0,341637908	5,609958857	8,547140178	10,989296
500	7000	0,181519215	0,46323451	1,075800003	1,996997552	3,393307258	5,529314848
1500	7000	0,571017736	0,483767976	2,038542543	3,443067735	6,076124257	10,84165136
500	350000	1,128933201	0,40484217	0,077099245	2,242923005	3,615598705	5,221687769
1500	350000	2,826443786	1,374343552	5,108783073	11,42588214	18,46784992	27,47044073
750	43750	0,026083833	0,002500596	0,163999685	0,597677612	1,435588615	2,958999686
1250	43750	0,000566755	0,000357584	0,074131528	0,349763456	1,076880726	2,67880498
750	306250	7,88946E-07	0,296185075	0,969030929	2,17650472	3,794120116	15,00185375
1250	306250	0,089958035	1,701875477	4,306248069	8,339673376	13,17200885	18,583565
250	14000	0,300593218	0,744971197	1,54114837	2,691813513	4,654528167	7,03404228
750	14000	0,093565033	0,008855726	0,075045264	0,430979621	1,240451385	2,803797742
1250	14000	0,007440192	0,001503477	0,098536424	0,497828675	1,537360748	3,770681783
1750	14000	1,101086329	0,708304842	1,338416151	2,470936293	4,934632314	13,71595844
100	24500	0,478663822	0,112559549	0,13540289	0,628238838	1,575929747	3,084100867
500	24500	0,283243042	0,685791594	1,502190043	2,677893989	4,399951878	6,94148659
1000	24500	0,192094155	0,091608902	0,00291317	0,193521061	0,842778871	2,32151734
1500	24500	0,728242836	0,589746939	1,199883745	2,206150923	4,164031368	7,891312913
2000	24500	0,303596762	0,911986986	0,561959495	0,021491201	0,649622161	2,94392319
250	7000	0,283488693	0,66885835	1,362109593	2,366942314	3,817784104	6,467024912
750	7000	0,117461153	0,020388156	0,045756305	0,342126043	1,075827452	2,522079178
1250	7000	0,011982328	0,004244214	0,085649976	0,478910816	2,325754543	6,237042228
1750	7000	1,177987616	0,793412612	2,407634408	3,965826668	7,096594659	12,96404294
250	350000	0,100718158	0,010837296	0,006421017	0,091881028	0,271321263	0,532785337
750	350000	7,06769E-05	0,419411966	1,409315432	3,196847953	14,79886616	19,4010737
1250	350000	0,060168298	1,934677662	5,302686329	10,69668101	17,33042247	25,0145572
1750	350000	2,566686594	0,010398182	7,869473511	15,73851553	26,2554609	37,82469537
SEA		0,907990517	1,10866597	1,655622657	2,209247165	2,759250399	3,377982735
278	mittl.abs.Fehler	0,693260501	0,765733834	1,134616995	1,579513576	2,054690998	2,586846128
	mittl.rel.Fehler*	0,000198074	0,000218781	0,000324176	0,00045129	0,000587055	0,000739099

* mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(SO₂)=2000 ppm

Tabelle C.180: RSS für die SO₂ Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz cont..

Meßgaskonz.		RSS für die Konzentrationsbestimmung - SEP=3,8022 Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%				
c(SO ₂)/ppm	c(H ₂ O)/ppm	34	33	32	31	30
100	7000	2,630897343	4,51591058	7,130495945	10,54936774	14,92390952
1000	175000	2,263633619	2,872723032	3,60254053	5,096505116	7,640981182
2000	350000	158,1360218	200,9722115	255,1417944	334,513337	519,6310162
100	350000	0,000390064	0,026570237	0,096118592	0,233350486	0,04644914
2000	7000	22,58560958	32,00384804	43,5764545	71,03957432	76,71012969
500	87500	7,949645797	10,31191765	13,14300854	16,07091693	19,16991475
500	262500	2,770167906	3,584477336	4,550029034	5,958840817	7,902225024
1500	87500	3,531829617	4,50155276	5,46351524	5,32850166	4,253589048
1500	262500	19,37891109	27,56083072	38,59568193	76,56414442	105,2872764
1000	7000	3,894189287	6,744937193	10,84999989	19,35492608	24,88946659
1000	350000	44,32630365	57,17042404	72,6659125	93,75455037	121,3804383
100	175000	2,406065137	3,290720934	4,340761167	5,535193388	6,896369115
2000	175000	19,70879993	24,49111455	31,01214346	44,7848454	67,82828286
250	43750	13,87290215	18,40269717	23,92979213	30,29595226	37,59202298
1750	306250	44,47006466	62,0471737	111,6677124	152,4052671	214,669774
750	131250	0,271946826	0,409885851	0,581935384	0,642964076	0,603816431
1250	218750	9,160563125	12,53770893	16,74640363	37,43134566	50,40716965
250	306250	0,008084402	0,004787564	0,052059383	0,03018618	0,447663292
1750	43750	11,06079489	15,27571926	20,07297481	23,61818902	23,96320047
750	218750	1,801627377	2,529761361	3,438598575	11,88004122	15,28247543
1250	131250	0,245787458	0,277225417	0,328345406	0,67061958	1,516613028
500	175000	1,380546855	1,511537085	1,665921192	1,691840311	1,614194845
1500	175000	3,276278618	4,719509736	6,684154508	10,85784074	17,91939357
1000	87500	0,647082337	1,157416041	1,868507907	2,352119614	2,593458872
1000	262500	11,99762168	30,06161054	37,19637791	47,61857027	61,51448791
100	87500	5,988312716	8,654563585	11,97904938	19,14965996	24,21583344
2000	87500	0,363678329	0,154598125	0,074724867	0,302101093	1,5805686
100	262500	0,833184285	0,919681717	1,0147334	1,071597246	0,590900096
2000	262500	58,85296303	76,8392983	100,8606193	174,0156615	238,7055532
250	131250	9,065864035	11,14332491	13,58692898	16,15265207	18,87085514
1750	131250	0,012645404	0,000110279	0,036903335	0,536345629	5,730100345
250	218750	1,23522904	4,0379628	4,341088162	4,516604361	4,625627105
1750	218750	14,93600566	21,08008407	29,26826415	43,93080358	67,40851128
500	7000	8,267146017	11,71931623	16,29201102	21,61862142	27,90323538
1500	7000	16,53012502	23,38205546	32,15510441	39,87810014	58,09381748
500	350000	7,376366275	10,23123422	13,62500195	18,24679489	24,24822138
1500	350000	40,38738828	82,42684808	109,114139	148,120292	198,8816468
750	43750	4,942179734	7,70360362	11,03819702	14,63339464	18,44310719
1250	43750	6,471633986	9,428497188	13,10182886	16,13936089	18,48633682
750	306250	19,14914521	24,36951677	30,48915169	42,04242472	49,96064438
1250	306250	42,71020618	55,44645858	71,38319789	93,87643309	124,7563692
250	14000	10,05048067	13,84563355	18,63023088	24,31014387	28,74662306
750	14000	4,960682286	7,848665442	11,79649995	16,23934337	21,32634194
1250	14000	6,548411001	10,38490606	15,54521131	20,48843363	25,26479585
1750	14000	20,6902111	28,54845684	36,82820008	43,96672159	58,87034412
100	24500	5,221978593	8,10007208	11,85344543	16,52243649	22,26033965
500	24500	10,08554134	13,97844139	18,94679668	24,53341104	30,94855654
1000	24500	4,406725881	7,187367338	10,98188834	14,9180087	19,40599536
1500	24500	12,3355662	20,7580349	27,699296	33,37953687	37,53717979
2000	24500	6,601538059	11,12953908	20,17395762	24,04702579	25,07741516
250	7000	9,231432385	12,74192893	17,21420675	22,57824504	29,04232688
750	7000	4,605199376	7,404479032	11,32751436	15,81435179	21,06115323
1250	7000	10,10494172	14,9803522	21,47950846	27,78974094	34,02518453
1750	7000	20,00804052	46,02737219	59,05248721	69,31134588	76,93954427
250	350000	0,924540757	1,48231295	2,206943649	3,223410731	4,563160913
750	350000	25,33624374	32,61315959	41,5338403	53,44879446	68,85474674
1250	350000	54,54379475	73,31662852	94,72311973	122,7841971	163,221637
1750	350000	54,62498927	105,7924399	140,5774105	188,56339	262,0614366
SEA		4,166105428	5,030610642	5,829829883	6,837652926	7,94144308
mittl.abs.Fehler		3,163586901	3,833784051	4,464070341	5,249026018	6,031709587
mittl.rel.Fehler*		0,000903882	0,001095367	0,001275449	0,001499722	0,001723346
*mittl.rel.Fehler bezogen auf den Meßbereichsendwert von c(SO ₂)=2000 ppm						

**Kalibration Mischung SO₂/H₂O während des
Alterungsprozesses über Zeigermodell**

Tabelle C.181: H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozess 7.3 Hz .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
c(SO ₂)/ppm	c(H ₂ O)/ppm	40	39	38	37	36	35
100	7000	6893,549332	6888,608383	6883,58233	6878,719196	6874,026736	6869,549389
1000	175000	174983,24	175004,3409	174993,158	174978,2798	174972,7819	174971,3611
2000	350000	349702,0905	349679,9981	349609,875	349556,2281	349490,9995	349449,5031
100	350000	350029,0329	349978,6237	349950,9223	350004,8493	349976,9469	349950,8465
2000	7000	6894,233335	6971,175804	7042,802212	7118,964656	7198,935916	7285,319528
500	87500	87315,28391	87320,51118	87313,47964	87305,6664	87296,05215	87287,02459
500	262500	262683,0256	262752,6359	262775,7246	262802,5277	262718,8551	262761,0561
1500	87500	87327,79539	87351,48178	87355,70775	87371,19662	87373,30626	87390,8454
1500	262500	262693,3713	262635,951	262612,1548	262568,1486	262547,9148	262530,898
1000	7000	6893,269362	6896,360837	6899,810871	6904,311239	6909,17092	6915,681558
1000	350000	349788,8228	349812,7498	349786,1287	349773,0015	349772,0238	349722,0991
100	175000	175049,1683	175081,322	175087,9505	175088,9451	175095,4462	175100,1932
2000	175000	174928,0493	174993,5009	175018,0142	175045,4899	175080,0292	175113,8897
250	43750	43809,45492	43811,48946	43806,96755	43813,70626	43806,80724	43798,053
1750	306250	306328,2389	306300,9235	306191,2475	306146,6728	306087,857	306063,0851
750	131250	131092,5476	131102,4776	131098,1983	131087,0196	131085,7689	131076,4853
1250	218750	218853,3861	218856,9525	218844,0593	218831,692	218820,7515	218814,4129
250	306250	306306,5463	306382,76	306427,2943	306479,614	306525,3814	306575,7213
1750	43750	43815,53214	43847,65089	43875,5153	43904,3293	43933,11455	43962,49671
750	218750	218877,2749	218905,8858	218912,874	218914,7149	218915,4222	218931,0691
1250	131250	131082,5485	131092,6668	131085,2606	131083,5537	131082,4883	131082,3292
500	175000	174995,9979	175034,5198	175042,9429	175053,0403	175065,5154	175083,0918
1500	175000	175005,7145	174979,9755	174971,2099	174979,5666	174963,6668	174976,2312
1000	87500	87315,91078	87320,21819	87308,22867	87297,82739	87286,41517	87275,78902
1000	262500	262663,7687	262680,0249	262672,7537	262662,198	262655,6265	262647,3893
100	87500	87344,10285	87397,04035	87410,01711	87420,43218	87432,58752	87445,09235
2000	87500	87276,40332	87347,91339	87399,861	87455,03925	87507,74392	87567,09439
100	262500	262809,7654	262846,8177	262841,9049	262827,608	262818,1198	262811,0478
2000	262500	262603,1372	262608,1282	262607,6956	262574,7226	262578,8769	262566,0854
250	131250	131092,3232	131130,2214	131149,2564	131202,6682	131212,0689	131229,7778
1750	131250	131086,9162	131117,5414	131142,4879	131160,9933	131185,5941	131217,355
250	218750	218855,4009	218921,6582	218953,035	218992,7512	219027,6314	219067,2245
1750	218750	218874,4069	218879,8379	218873,4002	218823,6941	218811,1707	218818,46
500	7000	6896,204489	6885,815837	6874,837699	6863,860326	6853,519806	6842,402617
1500	7000	6895,696748	6925,914026	6968,96472	7004,013075	7042,806166	7084,081256
500	350000	349812,0971	349893,4457	349930,4222	349872,8885	349922,61	349994,2631
1500	350000	349833,7016	349755,4038	349673,322	349612,0737	349546,6488	349511,6317
750	43750	43817,95049	43807,54557	43788,79338	43768,04171	43748,96018	43727,16865
1250	43750	43811,61415	43812,15044	43811,333	43806,64462	43804,78191	43800,58589
750	306250	306332,1676	306375,2917	306382,9413	306394,7065	306418,1392	306368,195
1250	306250	306300,7355	306304,5258	306257,38	306234,1337	306196,2268	306176,5732
250	14000	14021,13443	14017,93698	14013,41792	14008,72173	13999,06358	13994,7556
750	14000	14023,58285	14020,83222	14017,06614	14013,42971	14009,85502	14006,87325
1250	14000	14021,01091	14036,60943	14054,16204	14074,95899	14095,61532	14117,56223
1750	14000	14023,73106	14072,87469	14126,56457	14180,88965	14239,45479	14310,63347
100	24500	24657,30023	24661,40303	24673,64936	24675,00069	24676,41024	24677,30396
500	24500	24665,41703	24655,78694	24641,71787	24625,67182	24611,10334	24592,99643
1000	24500	24668,77348	24665,58849	24659,23109	24652,35659	24643,95969	24636,80255
1500	24500	24666,87548	24687,52105	24705,72929	24726,81052	24747,61756	24766,72823
2000	24500	24642,10771	24696,9644	24758,55478	24824,56261	24881,90813	24951,33193
250	7000	6893,936144	6885,02784	6875,886047	6866,650909	6857,500064	6851,613877
750	7000	6895,311599	6889,111528	6882,475562	6876,861458	6870,810917	6866,06004
1250	7000	6892,719786	6908,754668	6924,637698	6943,814633	6971,893996	7002,854069
1750	7000	6895,045031	6943,686947	7002,719588	7057,875687	7115,959198	7179,393154
250	350000	349695,5421	349823,1311	349856,0632	349891,6528	349926,5794	349980,6698
750	350000	349800,7196	349865,3256	349869,3897	349871,2696	349820,9595	349863,8401
1250	350000	349775,7527	349766,8735	349719,0305	349674,361	349634,6518	349621,8473
1750	350000	349812,7743	349784,0611	349644,6037	349575,672	349508,9364	349433,2451

D Tabellen

Tabelle C.182: H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz cont..

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%				
c(SO ₂)/ppm	c(H ₂ O)/ppm	34	33	32	31	30
100	7000	6865,669049	6862,195469	6858,824884	6856,011288	6853,339353
1000	175000	174985,0047	174996,4168	174987,8175	174981,8667	174920,1684
2000	350000	349392,6937	349393,1463	349340,9532	349271,3196	349163,2998
100	350000	349827,0359	349819,7116	349769,9278	349703,5346	349702,3571
2000	7000	7392,685697	7491,54264	7594,571786	7720,040159	7840,128655
500	87500	87277,09641	87266,34279	87243,06027	87212,33814	87158,38657
500	262500	262830,3703	262898,1905	262947,8297	262985,232	262962,7659
1500	87500	87400,61294	87418,0306	87417,42147	87419,70959	87390,56281
1500	262500	262513,2389	262517,6858	262502,4737	262459,6134	262379,7311
1000	7000	6923,283124	6931,752864	6941,245652	6971,003824	6982,905525
1000	350000	349753,6667	349811,1772	349846,3811	349853,0348	349808,1345
100	175000	175112,6822	175123,1855	175121,1691	175100,9052	175038,7776
2000	175000	175146,8332	175197,4343	175223,2206	175237,3595	175196,927
250	43750	43788,86928	43778,27389	43760,31857	43736,77054	43703,05963
1750	306250	306042,2321	306033,8222	305994,3932	305946,0377	305808,5743
750	131250	131078,5393	131078,5686	131069,2662	131044,7742	130992,8542
1250	218750	218825,6468	218835,2523	218828,3597	218814,6775	218742,563
250	306250	306637,7885	306710,289	306767,3576	306817,8291	306765,8286
1750	43750	43989,42197	44020,38325	44047,00889	44068,08418	44075,0914
750	218750	218962,8453	218995,9919	219014,4011	218975,3998	218932,0676
1250	131250	131094,4213	131106,3042	131102,265	131086,7357	131038,4412
500	175000	175108,4407	175133,4025	175152,1982	175147,3421	175105,3935
1500	175000	174984,6177	175008,6438	175000,9555	174989,2748	174931,2134
1000	87500	87263,2749	87255,80665	87235,07824	87209,1542	87155,19496
1000	262500	262675,4136	262664,5213	262678,9112	262688,4862	262639,7787
100	87500	87433,83759	87447,39139	87452,51639	87473,48312	87449,79428
2000	87500	87630,28707	87685,11768	87742,66704	87782,36671	87806,26827
100	262500	262819,2909	262821,3484	262806,1369	262768,3821	262599,6421
2000	262500	262580,9459	262576,5125	262567,8111	262544,7184	262465,6367
250	131250	131252,0631	131275,2844	131283,8672	131279,3536	131248,3723
1750	131250	131246,1404	131270,7361	131285,8673	131295,0161	131282,452
250	218750	219116,6039	219237,821	219266,6306	219289,2643	219258,0964
1750	218750	218826,2308	218839,9002	218834,98	218812,411	218731,6159
500	7000	6831,607488	6821,808238	6811,46053	6800,674639	6790,676643
1500	7000	7128,614068	7176,398952	7228,021687	7283,745999	7359,1047
500	350000	350077,1902	350182,8631	350259,3968	350314,8995	350315,0534
1500	350000	349491,2876	349452,9	349414,8591	349369,8212	349246,8114
750	43750	43703,99513	43677,37216	43646,87044	43608,97563	43558,9567
1250	43750	43805,36009	43799,11139	43786,64594	43767,17272	43739,7704
750	306250	306422,2082	306489,7786	306528,0354	306566,6008	306544,8389
1250	306250	306155,5609	306169,7759	306187,3403	306163,4347	306088,4562
250	14000	13990,5248	13986,62332	13981,74493	13976,03499	13943,83167
750	14000	14005,16064	14001,79841	13999,22781	13996,13351	13991,40704
1250	14000	14141,473	14168,83083	14196,16489	14225,51005	14254,90316
1750	14000	14374,84007	14445,43442	14515,27979	14592,54585	14675,74204
100	24500	24678,96314	24679,9276	24678,44143	24675,57202	24667,43469
500	24500	24576,02949	24557,08052	24533,87412	24508,43932	24476,88075
1000	24500	24629,6222	24623,58035	24612,23462	24600,0533	24579,5157
1500	24500	24791,65702	24820,41844	24842,31263	24862,74487	24879,09161
2000	24500	25015,27514	25085,47114	25155,28694	25223,05826	25291,82205
250	7000	6842,907747	6834,236703	6825,817742	6817,518869	6808,605679
750	7000	6861,418047	6857,292875	6853,690274	6850,796826	6848,111316
1250	7000	7026,96394	7054,650696	7081,811055	7113,178441	7147,088475
1750	7000	7247,178093	7349,027164	7425,513893	7507,381533	7594,683742
250	350000	350052,4903	350128,1862	350184,3557	350221,7912	350174,3304
750	350000	349924,5697	350018,974	350079,8794	350117,4144	350095,1237
1250	350000	349593,6622	349605,7163	349607,1992	349583,8038	349496,7332
1750	350000	349408,6662	349375,1794	349313,5887	349227,3328	349093,8521

Tabelle C.183: Residuen für die H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz .

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%					
c(SO ₂)/ppm	c(H ₂ O)/ppm	40	39	38	37	36	35
100	7000	106,4506678	111,3916168	116,41767	121,2808038	125,9732645	130,4506109
1000	175000	16,76002259	4,34093994	6,841977507	21,72024538	27,21805095	28,63889578
2000	350000	297,9094657	320,0019176	390,1249617	443,7719427	509,0005003	550,4969488
100	350000	29,03289109	21,37633517	49,07770206	4,849309725	23,05309539	49,15347582
2000	7000	105,7666654	28,82419629	42,80221209	118,9646564	198,9359165	285,3195283
500	87500	184,7160937	179,4888212	186,5203596	194,3336028	203,9478547	212,9754105
500	262500	183,0256381	252,6359198	275,7246233	302,5276639	218,8550919	261,0561214
1500	87500	172,2046051	148,5182196	144,2922546	128,8033821	126,6937373	109,154605
1500	262500	193,3713261	135,9510305	112,1548101	68,14861648	47,91482239	30,89801435
1000	7000	106,7306383	103,6391625	100,1891293	95,6887607	90,82908032	84,31844163
1000	350000	211,1772358	187,2501531	213,8713329	226,9984589	227,9762048	277,9008624
100	175000	49,16834923	81,32195769	87,95045257	88,94514133	95,44615883	100,1931992
2000	175000	71,95073469	6,499122754	18,01423303	45,48991545	80,02917555	113,8896882
250	43750	59,45492442	61,48946192	56,96754999	63,70626146	56,80724241	48,05299541
1750	306250	78,23891245	50,92346307	58,75250548	103,3272243	162,1430085	186,9149384
750	131250	157,4524369	147,5224485	151,8017229	162,9804248	164,2311087	173,5147095
1250	218750	103,3861487	106,9525045	94,05932126	81,69199664	70,75154451	64,41286013
250	306250	56,54633235	132,7600278	177,2943261	229,6140095	275,3813916	325,7213379
1750	43750	65,53213633	97,6508895	125,5152975	154,3292988	183,1145461	212,4967129
750	218750	127,2748826	155,8858238	162,8740329	164,714946	165,4222046	181,0691349
1250	131250	167,4514511	157,3332457	164,7393917	166,4463192	167,511691	167,6708417
500	175000	4,002102905	34,51982787	42,94290864	53,04027752	65,51536221	83,09178742
1500	175000	5,714498299	20,02445576	28,79012139	20,43337309	36,33320729	23,76877857
1000	87500	184,089219	179,7818141	191,7713281	202,1726052	213,5848281	224,2109759
1000	262500	163,768669	180,0248649	172,7536775	162,1979892	155,6264866	147,3892653
100	87500	155,8971543	102,9596537	89,98288859	79,56781667	67,41248184	54,90765298
2000	87500	223,5966814	152,0866055	100,1389952	44,96075015	7,743922719	67,09439165
100	262500	309,7654495	346,8177193	341,9049206	327,6080019	318,1197714	311,0478364
2000	262500	103,1372483	108,1281885	107,6955606	74,72260135	78,87685541	66,0853948
250	131250	157,6767783	119,7786322	100,7436062	47,3317637	37,9311123	20,2221585
1750	131250	163,0838101	132,4586387	107,5121345	89,00667354	64,40590118	32,64500045
250	218750	105,4009149	171,6581847	203,0350127	242,7511953	277,6314296	317,2245363
1750	218750	124,406897	129,8379273	123,4001972	73,69406813	61,17074337	68,46001184
500	7000	103,7955109	114,1841625	125,162301	136,1396742	146,4801937	157,5973832
1500	7000	104,3032522	74,08597416	31,03528015	4,013075092	42,80616634	84,08125599
500	350000	187,9029147	106,554331	69,57783661	127,1114863	77,38995433	5,736882906
1500	350000	166,2983888	244,5961757	326,6780276	387,9263315	453,3512019	488,3682645
750	43750	67,95048977	57,54556953	38,79338142	18,04171489	1,039816169	22,83135264
1250	43750	61,61415239	62,15043591	61,33299865	56,64462244	54,78190804	50,58589326
750	306250	82,16756072	125,2917041	132,9412523	144,7065284	168,1392424	118,1949942
1250	306250	50,73548724	54,52579723	7,380004845	15,86626107	53,7732482	73,42679741
250	14000	21,13443394	17,93698408	13,41792147	8,721730157	0,936420602	5,244397374
750	14000	23,58284939	20,8322232	17,06613574	13,42971128	9,855019521	6,873252942
1250	14000	21,01090877	36,60942969	54,1620419	74,95898689	95,61532422	117,5622289
1750	14000	23,73105771	72,87469059	126,5645672	180,8896464	239,4547858	310,6334697
100	24500	157,3002346	161,4030328	173,6493558	175,0006935	176,4102426	177,3039614
500	24500	165,4170339	155,7869417	141,7178654	125,6718237	111,1033389	92,99643483
1000	24500	168,7734802	165,5884855	159,2310882	152,3565866	143,9596942	136,8025501
1500	24500	166,8754757	187,521046	205,72929	226,8105178	247,6175611	266,7282325
2000	24500	142,1077142	196,964402	258,5547808	324,5626065	381,9081286	451,3319251
250	7000	106,0638557	114,9721598	124,1139535	133,3490908	142,499936	148,3861225
750	7000	104,6884006	110,8884724	117,5244376	123,1385423	129,1890833	133,9399604
1250	7000	107,2802137	91,24533153	75,36230191	56,18536686	28,10600448	2,854069247
1750	7000	104,9549689	56,31305255	2,719588101	57,87568742	115,9591977	179,3931541
250	350000	304,4579404	176,8689097	143,9367999	108,3472082	73,42059342	19,33023149
750	350000	199,280413	134,6744153	130,6102829	128,7304118	179,0404702	136,1599314
1250	350000	224,2473161	233,1264961	280,9695426	325,6389916	365,3482083	378,1526562
1750	350000	187,2256892	215,9389291	355,3962635	424,3280344	491,0635594	566,7548505

D Tabellen

Tabelle C.184: Residuen für die H₂O Bestimmung aus der Mischung SO₂/H₂O - beim Alterungsprozeß 7.3 Hz cont..

Meßgaskonz.		Konzentration SO ₂ /C ₂ H ₄ im Detektor in Vol.%				
c(SO ₂)/ppm	c(H ₂ O)/ppm	34	33	32	31	30
100	7000	134,3309513	137,8045315	141,1751161	143,9887123	146,660647
1000	175000	14,99531428	3,58315711	12,18245684	18,13328222	79,83158848
2000	350000	607,3062999	606,8536796	659,046834	728,6804136	836,7002368
100	350000	172,9640627	180,288441	230,0722057	296,4654331	297,6428752
2000	7000	392,6856971	491,5426398	594,5717858	720,0401587	840,1286555
500	87500	222,9035933	233,6572071	256,9397279	287,6618646	341,6134328
500	262500	330,3703143	398,190522	447,8297303	485,232024	462,7659017
1500	87500	99,38706416	81,96939849	82,5785287	80,29040504	109,4371856
1500	262500	13,23894786	17,68579474	2,473674945	40,38657705	120,2688766
1000	7000	76,71687604	68,24713553	58,75434752	28,99617616	17,0944749
1000	350000	246,3333111	188,822833	153,6189012	146,9652475	191,8654657
100	175000	112,6821729	123,1855295	121,1690671	100,9052203	38,77762637
2000	175000	146,8332271	197,4343191	223,2206273	237,3595064	196,9269591
250	43750	38,86927807	28,27389496	10,31856739	13,22945867	46,94036648
1750	306250	207,7679281	216,1778282	255,6067904	303,9622591	441,4257218
750	131250	171,4607011	171,4313619	180,7337511	205,2257551	257,1457645
1250	218750	75,64675732	85,25225081	78,35969564	64,67751921	7,43699459
250	306250	387,7884504	460,288953	517,3575664	567,8290538	515,8286369
1750	43750	239,4219714	270,3832485	297,008889	318,0841839	325,0914023
750	218750	212,8453284	245,9919279	264,4010866	225,3997966	182,0675816
1250	131250	155,5787139	143,6957987	147,7350215	163,2643241	211,5588229
500	175000	108,4406914	133,4024995	152,1981812	147,3421456	105,3935241
1500	175000	15,38233452	8,643755146	0,9555185	10,72521429	68,7866137
1000	87500	236,7251006	244,1933496	264,9217625	290,8458019	344,8050412
1000	262500	175,413633	164,5213312	178,9112264	188,4861775	139,7787319
100	87500	66,16240894	52,60861351	47,48360582	26,51687685	50,20572316
2000	87500	130,2870677	185,1176781	242,6670408	282,366713	306,2682718
100	262500	319,2909328	321,3484495	306,1368619	268,382143	99,64210644
2000	262500	80,945948	76,51250586	67,811071	44,71837906	34,36329072
250	131250	2,063073426	25,28435418	33,86722308	29,35355197	1,627684977
1750	131250	3,859647309	20,73608124	35,86734719	45,0161294	32,45200586
250	218750	366,6039345	487,8210108	516,6305633	539,2642975	508,0963883
1750	218750	76,23080971	89,90023428	84,98002553	62,41096621	18,38414983
500	7000	168,3925117	178,1917618	188,5394696	199,325361	209,3233567
1500	7000	128,6140678	176,3989523	228,021687	283,7459992	359,1046997
500	350000	77,19023405	182,8631265	259,3968286	314,8994926	315,0534422
1500	350000	508,7124083	547,0999763	585,140856	630,1788158	753,18861
750	43750	46,00486916	72,62783806	103,1295622	141,0243748	191,0433034
1250	43750	55,36008611	49,11138728	36,64594079	17,17272433	10,22959677
750	306250	172,208165	239,7785895	278,0354255	316,6007686	294,8389007
1250	306250	94,43905456	80,22414169	62,65972144	86,56532346	161,5438102
250	14000	9,475197386	13,37668173	18,25507377	23,96500989	56,16833009
750	14000	5,160637632	1,798405214	0,772192462	3,866488336	8,592961174
1250	14000	141,4730013	168,8308329	196,1648897	225,5100523	254,9031558
1750	14000	374,8400679	445,4344154	515,279794	592,5458483	675,7420377
100	24500	178,9631365	179,9275972	178,4414287	175,5720184	167,4346895
500	24500	76,02949448	57,08051846	33,87411697	8,43931935	23,11924601
1000	24500	129,6221981	123,5803457	112,2346177	100,0532998	79,51570309
1500	24500	291,6570186	320,4184361	342,3126255	362,7448749	379,0916056
2000	24500	515,2751372	585,4711404	655,2869432	723,0582625	791,8220542
250	7000	157,092253	165,7632969	174,1822582	182,4811313	191,3943214
750	7000	138,5819535	142,7071253	146,3097258	149,2031737	151,8886844
1250	7000	26,96394012	54,65069562	81,81105517	113,1784409	147,088475
1750	7000	247,1780932	349,0271644	425,5138933	507,3815331	594,6837415
250	350000	52,49025957	128,1862451	184,3557121	221,7912333	174,3303578
750	350000	75,43031506	18,97398025	79,87936015	117,4143543	95,12368235
1250	350000	406,3378399	394,2837449	392,8007772	416,1962021	503,2668193
1750	350000	591,3337546	624,8206067	686,4113055	772,6671538	906,1479494