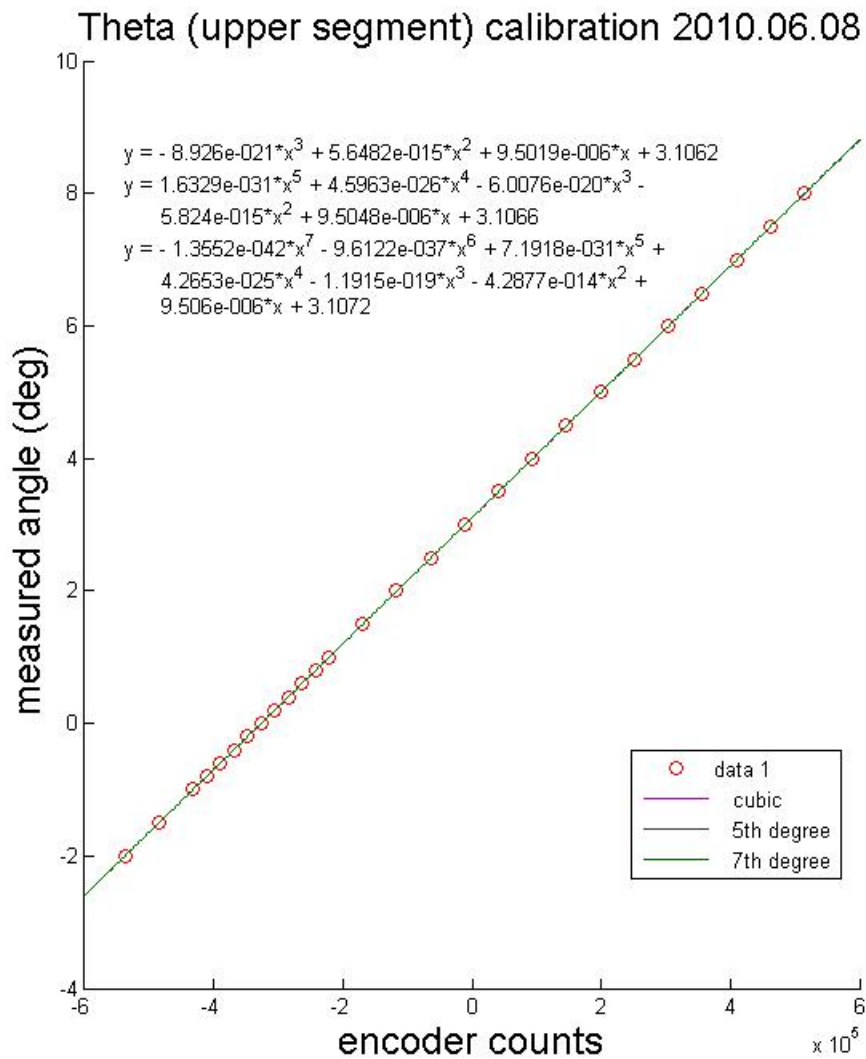


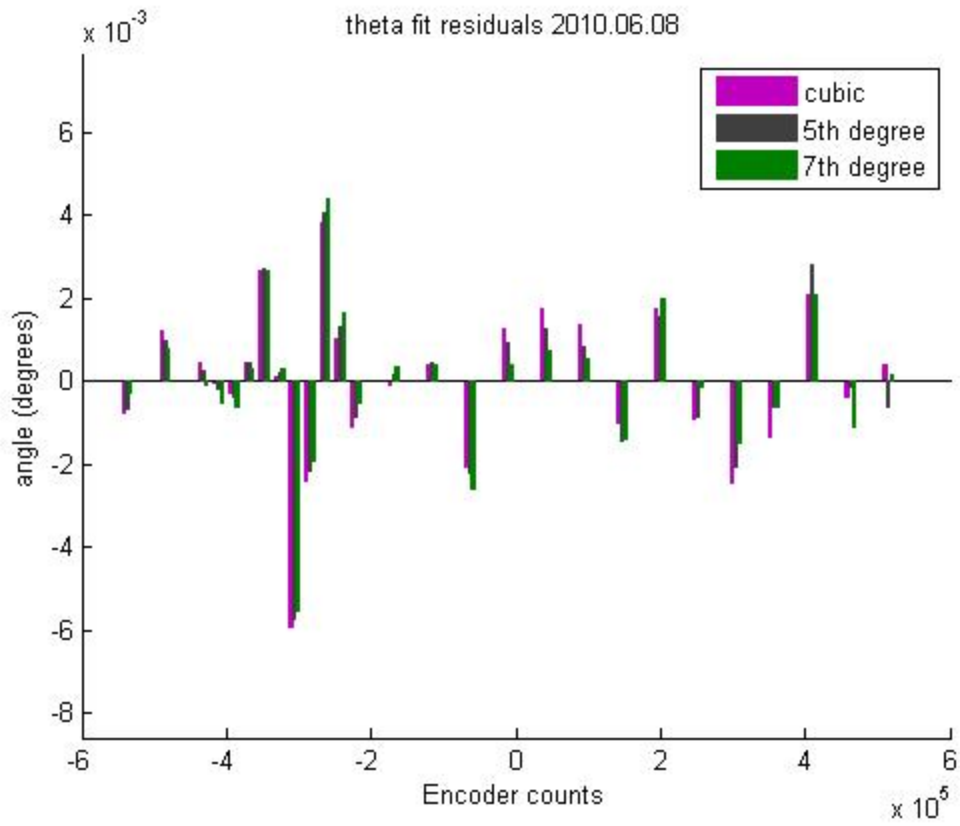
Huber Tilt Stage Calibration 8-ID-E

June 2010

I. Calibration of theta arc (upper segment)

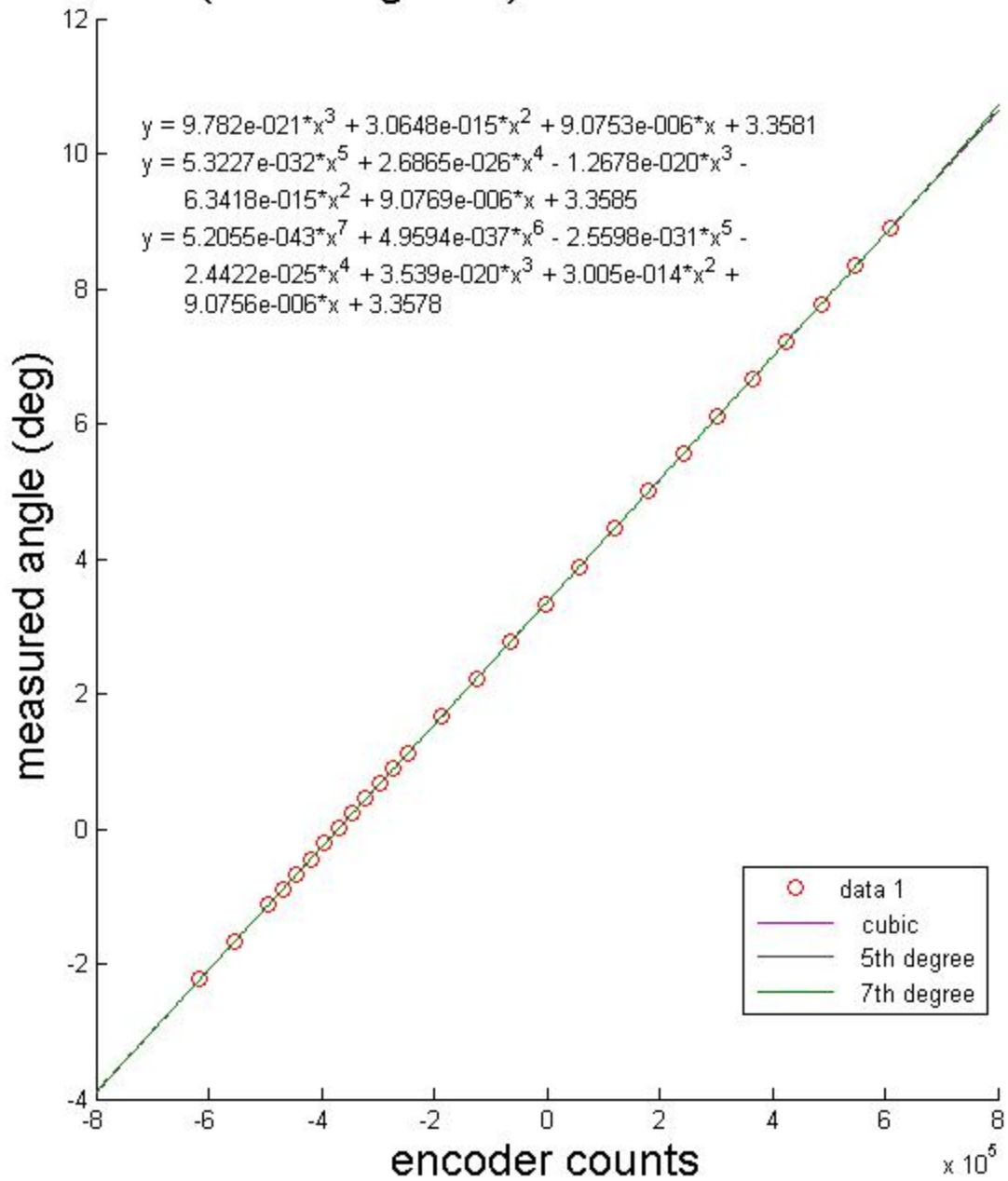
Final calibration:

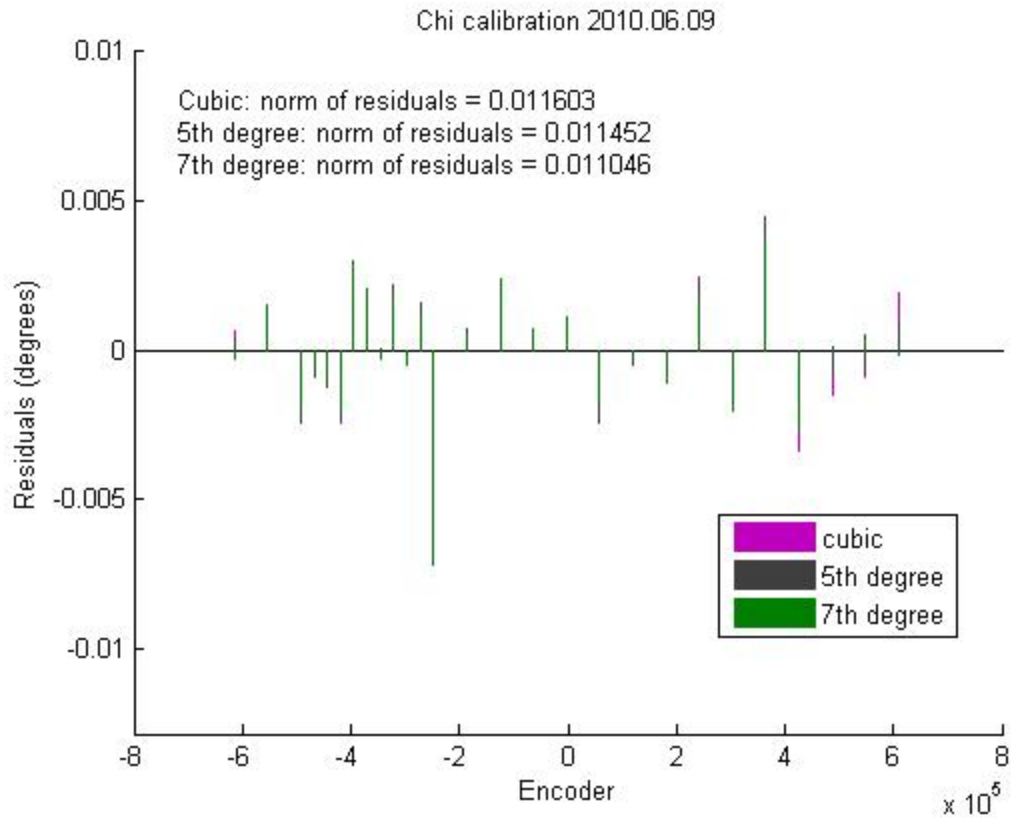




II. Calibration of chi arc (lower segment)

Chi (lower segment) calibration 2010.06.09





III. Calibration Data

Theta data from 2010.06.08

Theta angle	encoder	motorPos	Dial readback	ineterferometer
0	-327105	123270	3.11063344	
-0.2	-348157	131194	3.30678810	-0.198174
-0.4	-369205	139110	3.51065677	-0.400209
-0.6	-390255	147027	3.71070000	-0.600811
-0.8	-411326	154952	3.91075427	-0.800566
-1	-432379	162863	4.11067997	-0.999913
-1.5	-485045	182642	4.61064575	-1.499042
-2	-537740	202412	5.11062450	-2.001006
0	-327108	123256	3.11066195	-0.000864
0.2	-306063	115331	2.91065563	0.192961
0.4	-285021	107407	2.71065226	0.396288
0.6	-263982	99484	2.51065379	0.602294
0.8	-242944	91559	2.31064311	0.799327
1	-221908	83633	2.11063165	0.996963
1.5	-169335	63808	1.61069065	1.497392
2	-116767	43980	1.11071541	1.997246
2.5	-64209	24163	0.61078337	2.494081
3	-11646	4342	0.11078171	2.996851
3.5	40925	-15481	-0.38928826	3.496846

4	93486	-35295	-0.88922545	3.995933
4.5	146061	-55112	-1.38922829	4.493189
5	198646	-74928	-1.88922879	4.995666
5.5	251252	-94749	-2.38930157	5.492896
6	303867	-114574	-2.88930250	5.991352
6.5	356503	-134392	-3.38931552	6.492688
7	409162	-154220	-3.88932941	6.996480
7.5	461846	-174044	-4.38933282	7.494588
8	514554	-193859	-4.88928582	7.996130
0	-327113	123291	3.11070947	0.000063

Chi data from 2010.06.09

Chi angle	encoder	motorPos	Dial readback	Interferometer
0	-370041	-141697	-3.02203600	
-0.2	-394549	-151103	-3.22203600	-0.219900
-0.4	-419055	-160473	-3.42199700	-0.447580
-0.6	-443571	-169847	-3.62201500	-0.668990
-0.8	-468086	-179209	-3.82200000	-0.891150
-1	-492611	-188578	-4.02204200	-1.115310
-1.5	-553927	-211978	-4.52205900	-1.668340
-2	-615258	-235361	-5.02200000	-2.226080
0	-370033	-141704	-3.02197100	0.001710
0.2	-345530	-132329	-2.82199000	0.222060
0.4	-321026	-122959	-2.62197900	0.446600
0.6	-296529	-113581	-2.42200400	0.666770
0.8	-272028	-104201	-2.22197600	0.890760
1	-247532	-94825	-2.02197100	1.104770
1.5	-186307	-71372	-1.52199900	1.668020
2	-125088	-47922	-1.02197200	2.225220
2.5	-63887	-24478	-0.52200000	2.778760
3	-2692	-1032	-0.02199700	3.334420
3.5	58489	22409	0.47796100	3.886970
4	119673	45847	0.97800000	4.444160
4.5	180848	69278	1.47801100	4.998850
5	242020	92704	1.97803100	5.557230
5.5	303186	116122	2.47802400	6.108860
6	364349	139530	2.97800300	6.669490
6.5	425513	162929	3.47798800	7.217710
7	486681	186322	3.97799300	7.775240
7.5	547849	209707	4.47797200	8.331630
8	609024	233085	4.97799730	8.890430
0	-370040	-141727	-3.02202800	0.001116