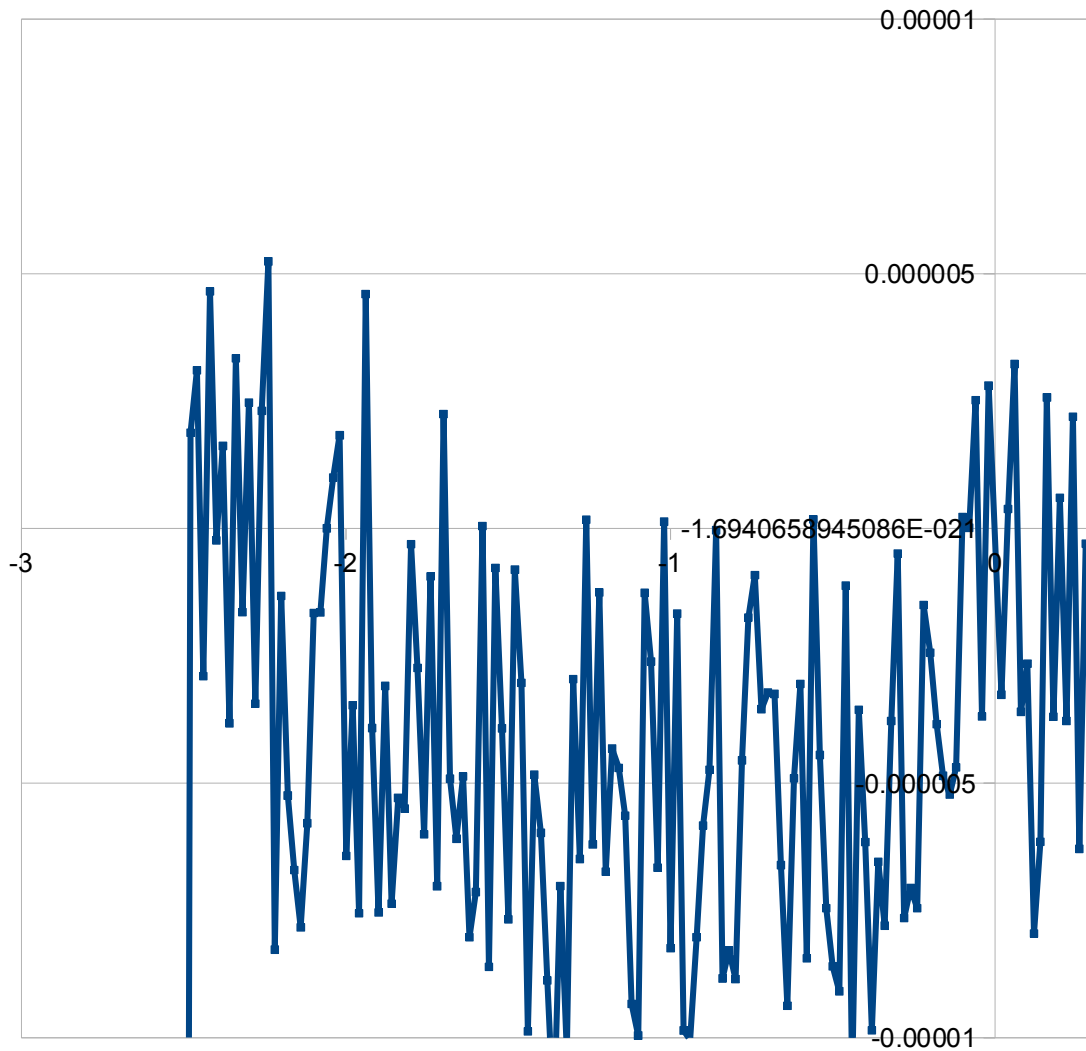


Sheet1

First stab with new Python setup. Off the shelf 2449 board, HP3456A

Input common mode at 1.5V, MUCH better!! (Amplifier not hitting PNP-NPN stage transition.)

neg	pos	LTC2449	HP3456	abs error	endpoint line	inl
2.77	0.23	-2.5000000093	-2.53888	-0.03887999	-2.54003366	-0.04003365
2.76	0.24	-2.5000000093	-2.51889	-0.01888999	-2.52003455	-0.020034543
2.75	0.25	-2.5000000093	-2.49891	0.001090009	-2.50004545	-0.000045443
2.74	0.26	-2.4800682347	-2.47894	0.001128235	-2.48006636	1.8779E-006
2.73	0.27	-2.4600703549	-2.45895	0.001120355	-2.46006725	3.1026E-006



2.34	0.66	-1.6799972113	-1.67924	0.000757211	-1.68000213	-4.9163E-006
2.33	0.67	-1.6599969287	-1.65925	0.000746929	-1.660003023	-6.0943E-006
2.32	0.68	-1.6400090512	-1.63927	0.000739051	-1.64001392	-4.8718E-006
2.31	0.69	-1.6200267989	-1.6193	0.000726799	-1.62003483	-8.0285E-006
2.3	0.7	-1.6000385862	-1.59932	0.000718586	-1.60004573	-7.1412E-006

Sheet1

2.29	0.71	-1.5800466668	-1.57933	0.000716667	-1.58004662	0.000000044
2.28	0.72	-1.559898844	-1.5592	0.000698844	-1.55990745	-8.6105E-006
2.27	0.73	-1.5399175789	-1.53922	0.000697579	-1.53991835	-7.7551E-007
2.26	0.74	-1.5199153218	-1.51923	0.000685322	-1.51991925	-0.000003928
2.25	0.75	-1.4999224711	-1.49925	0.000672471	-1.49993015	-7.6787E-006
2.24	0.76	-1.4799302351	-1.47926	0.000670235	-1.47993105	-8.1014E-007
2.23	0.77	-1.4599489141	-1.45929	0.000658914	-1.45995195	-3.0356E-006
2.22	0.78	-1.4399529714	-1.43931	0.000642971	-1.43996285	-9.8783E-006
2.21	0.79	-1.4199689124	-1.41933	0.000638912	-1.41997375	-4.8373E-006
2.2	0.8	-1.3999786694	-1.39935	0.000628669	-1.39998465	-5.9803E-006
2.19	0.81	-1.3800066803	-1.37939	0.00061668	-1.38001556	-8.8784E-006
2.18	0.82	-1.3600048143	-1.3594	0.000604814	-1.36001645	-1.1640E-005
2.17	0.83	-1.3400103245	-1.33941	0.000600324	-1.34001735	-0.000007025
2.16	0.84	-1.3200179394	-1.31943	0.000587939	-1.32002825	-0.00001031
2.15	0.85	-1.3000361901	-1.29945	0.00058619	-1.30003915	-2.9593E-006
2.14	0.86	-1.2798934896	-1.27932	0.00057349	-1.27989998	-6.4915E-006
2.13	0.87	-1.2599010486	-1.25933	0.000571049	-1.25990088	1.7215E-007
2.12	0.88	-1.239915574	-1.23936	0.000555574	-1.239921781	-0.000006207
2.11	0.89	-1.2199314218	-1.21938	0.000551422	-1.21993268	-1.2591E-006
2.1	0.9	-1.1999268364	-1.19939	0.000536836	-1.19993358	-6.7399E-006
2.09	0.91	-1.1799401511	-1.17941	0.000530151	-1.17994448	-4.3253E-006
2.08	0.92	-1.1599506717	-1.15943	0.000520672	-1.15995538	-4.7046E-006
2.07	0.93	-1.1399606336	-1.13945	0.000510634	-1.13996628	-5.6427E-006
2.06	0.94	-1.1199678388	-1.11947	0.000497839	-1.11997718	-9.3375E-006
2.05	0.95	-1.0999781173	-1.09949	0.000488117	-1.09998808	-9.9589E-006
2.04	0.96	-1.079997709	-1.07951	0.000487709	-1.07999898	-1.2671E-006
2.03	0.97	-1.0600072611	-1.05953	0.000477261	-1.06000988	-0.000002615
2.02	0.98	-1.04000411	-1.03954	0.00046411	-1.04001077	-6.6615E-006
2.01	0.99	-1.0200117994	-1.01955	0.000461799	-1.02001167	1.3251E-007
2	1	-0.9999542963	-0.99951	0.000444296	-0.99996254	-8.2433E-006
1.99	1.01	-0.9798917267	-0.97945	0.000441727	-0.9798934	-1.6763E-006
1.98	1.02	-0.9598944429	-0.95947	0.000424443	-0.959904303	-9.8601E-006
1.97	1.03	-0.9399051685	-0.93949	0.000415168	-0.939915203	-1.0034E-005
1.96	1.04	-0.9199180733	-0.91951	0.000408073	-0.9199261	-8.0296E-006
1.95	1.05	-0.8999211621	-0.89952	0.000401162	-0.899927	-5.8363E-006
1.94	1.06	-0.8799231518	-0.87953	0.000393152	-0.87992789	-0.000004742
1.93	1.07	-0.8599387575	-0.85955	0.000388757	-0.85993879	-3.6230E-008
1.92	1.08	-0.8399508614	-0.83958	0.000370861	-0.8399597	-8.8368E-006
1.91	1.09	-0.8199623134	-0.8196	0.000362313	-0.8199706	-8.2848E-006
1.9	1.1	-0.7999726478	-0.79962	0.000352648	-0.7999815	-8.8504E-006
1.89	1.11	-0.7799878437	-0.77964	0.000347844	-0.7799924	-4.5544E-006
1.88	1.12	-0.7600115519	-0.75967	0.000341552	-0.7600133	-1.7507E-006
1.87	1.13	-0.7400232833	-0.73969	0.000333283	-0.7400242	-9.1932E-007
1.86	1.14	-0.7200215478	-0.7197	0.000321548	-0.720025098	-3.5503E-006
1.85	1.15	-0.6998727005	-0.69956	0.0003127	-0.69987593	-3.2246E-006
1.84	1.16	-0.6798935775	-0.67959	0.000303577	-0.67989683	-3.2521E-006
1.83	1.17	-0.6599011179	-0.65961	0.000291118	-0.65990773	-6.6117E-006
1.82	1.18	-0.6399092544	-0.63963	0.000279254	-0.63991863	-9.3752E-006
1.81	1.19	-0.6199146155	-0.61964	0.000274616	-0.61991952	-4.9094E-006
1.8	1.2	-0.5999373738	-0.59967	0.000267374	-0.59994043	-3.0557E-006
1.79	1.21	-0.5799328815	-0.57968	0.000252882	-0.57994132	-8.4434E-006
1.78	1.22	-0.5599423964	-0.55969	0.000252396	-0.55994222	1.7608E-007
1.77	1.23	-0.5399486702	-0.53971	0.00023867	-0.53995312	-0.00000445

Sheet1

1.76	1.24	-0.5199665669	-0.51974	0.000226567	-0.51997402	-7.4578E-006
1.75	1.25	-0.4999663215	-0.49975	0.000216322	-0.49997492	-8.5986E-006
1.74	1.26	-0.4799767304	-0.47977	0.00020673	-0.47998582	-9.0897E-006
1.73	1.27	-0.4599955957	-0.45979	0.000205596	-0.45999672	-1.1243E-006
1.72	1.28	-0.4400167707	-0.43983	0.000186771	-0.44002763	-1.0858E-005
1.71	1.29	-0.419854885	-0.41967	0.000184885	-0.41985845	-3.5622E-006
1.7	1.3	-0.3998631891	-0.39969	0.000173189	-0.39986935	-0.000006158
1.69	1.31	-0.3798803966	-0.37972	0.000160397	-0.37989025	-0.000009855
1.68	1.32	-0.3598946054	-0.35974	0.000154605	-0.35990115	-6.5462E-006
1.67	1.33	-0.3399042506	-0.33976	0.000144251	-0.33991205	-0.000007801
1.66	1.34	-0.3199091647	-0.31977	0.000139165	-0.31991295	-3.7823E-006
1.65	1.35	-0.2999233548	-0.29979	0.000133355	-0.29992385	-4.9215E-007
1.64	1.36	-0.2799270954	-0.27981	0.000117095	-0.27993475	-7.6515E-006
1.63	1.37	-0.2599285822	-0.25982	0.000108582	-0.25993564	-0.00000706
1.62	1.38	-0.2399390843	-0.23984	9.9084E-005	-0.23994654	-0.000007458
1.61	1.39	-0.2199559379	-0.21986	9.5938E-005	-0.21995744	-1.5043E-006
1.6	1.4	-0.1999658998	-0.19988	8.5900E-005	-0.19996834	-2.4424E-006
1.59	1.41	-0.179975396	-0.1799	0.000075396	-0.17997924	-3.8461E-006
1.58	1.42	-0.1599852834	-0.15992	6.5283E-005	-0.15999014	-4.8587E-006
1.57	1.43	-0.1398557518	-0.1398	5.5752E-005	-0.13986098	-5.2265E-006
1.56	1.44	-0.1198671851	-0.11982	4.7185E-005	-0.11987188	-4.6931E-006
1.55	1.45	-0.0998629909	-0.09982	4.2991E-005	-0.09986277	2.2181E-007
1.54	1.46	-0.0798736792	-0.07984	3.3679E-005	-0.07987367	1.0148E-008
1.53	1.47	-0.059887087	-0.05986	0.000027087	-0.059884569	0.000002518
1.52	1.48	-0.03990178	-0.03989	0.00001178	-0.03990547	-3.6936E-006
1.51	1.49	-0.0199091714	-0.0199	9.1714E-006	-0.01990637	2.8024E-006
1.5	1.5	8.09412449598e8e-05		#VALUE!	8.2731E-005	#VALUE!
1.49	1.51	0.0200650934	0.02005	-1.5093E-005	0.020061827	-3.2668E-006
1.48	1.52	0.0400605518	0.04004	-2.0552E-005	0.040060931	3.7934E-007
1.47	1.53	0.0600568112	0.06003	-2.6811E-005	0.060060036	3.2246E-006
1.46	1.54	0.0800427329	0.08	-4.2733E-005	0.080039131	-3.6016E-006
1.45	1.55	0.1000308897	0.09998	-5.0890E-005	0.100028231	-2.6584E-006
1.44	1.56	0.1200252865	0.11996	-6.5286E-005	0.120017331	-7.9551E-006
1.43	1.57	0.1400125865	0.13994	-7.2586E-005	0.140006431	-6.1551E-006
1.42	1.58	0.1601530332	0.16008	-7.3033E-005	0.160155604	2.5711E-006
1.41	1.59	0.1801283937	0.18004	-8.8394E-005	0.180124695	-3.6985E-006
1.4	1.6	0.2001332026	0.20004	-9.3203E-005	0.200133804	6.0175E-007
1.39	1.61	0.2201266866	0.22002	-0.00010669	0.220122904	-3.7822E-006
1.38	1.62	0.2401198167	0.24001	-0.00010982	0.240122009	2.1922E-006
1.37	1.63	0.2600973938	0.25997	-0.00012739	0.2600911	-6.2939E-006
1.36	1.64	0.2800905053	0.27996	-0.00013051	0.280090205	-3.0075E-007
1.35	1.65	0.300082257	0.29994	-0.000142257	0.300079305	-2.9525E-006
1.34	1.66	0.3200765792	0.31993	-0.00014658	0.320078409	1.8299E-006
1.33	1.67	0.3400571179	0.3399	-0.00015712	0.340057505	3.8676E-007
1.32	1.68	0.3600657824	0.3599	-0.00016578	0.360066614	8.3132E-007
1.31	1.69	0.3800483327	0.37987	-0.00017833	0.380045709	-2.6235E-006
1.3	1.7	0.4000359867	0.39985	-0.00018599	0.400034809	-1.1774E-006
1.29	1.71	0.420020381	0.41983	-0.000190381	0.420023909	3.5283E-006
1.28	1.72	0.4401613306	0.43996	-0.00020133	0.440163078	1.7471E-006
1.27	1.73	0.460152505	0.45994	-0.000212505	0.460152178	-3.2724E-007
1.26	1.74	0.4801318515	0.47991	-0.00022185	0.480131273	-5.7830E-007
1.25	1.75	0.5001148675	0.49988	-0.00023487	0.500110369	-4.4988E-006
1.24	1.76	0.5201203283	0.51988	-0.00024033	0.520119478	-8.5046E-007

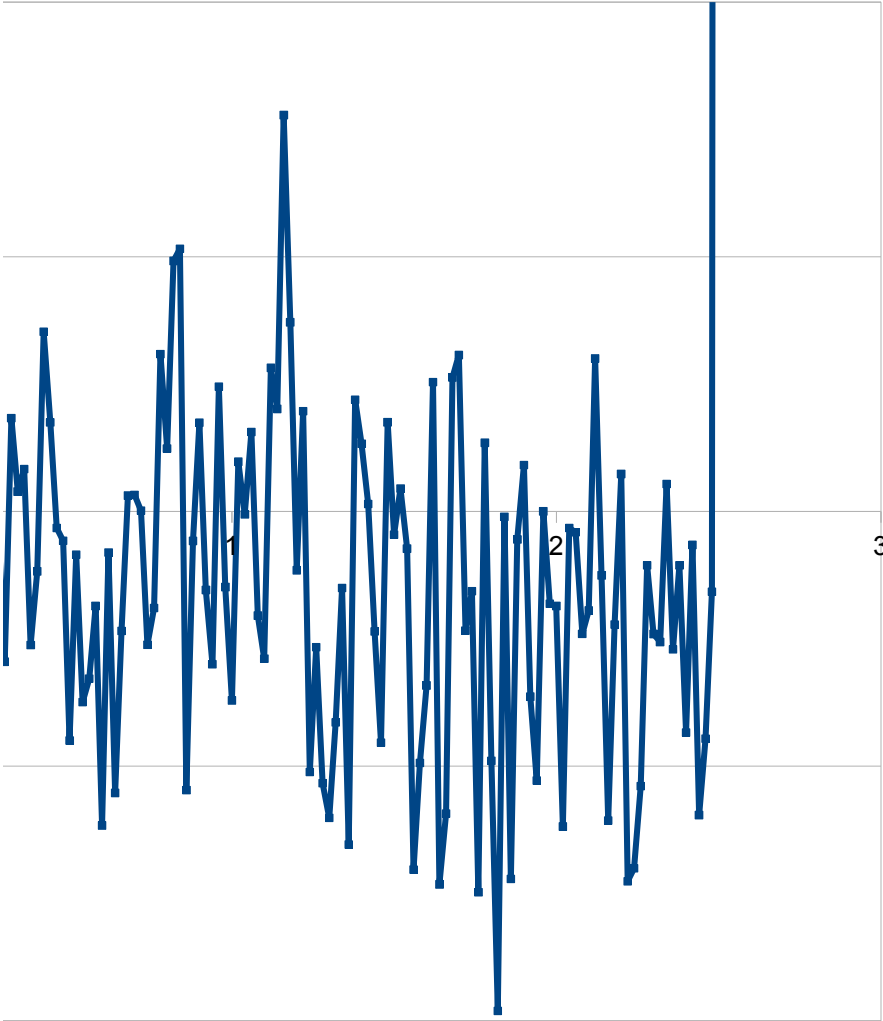
Sheet1

1.23	1.77	0.5401123222	0.53986	-0.00025232	0.540108578	-3.7443E-006
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1.21	1.79	0.5800886359	0.57982	-0.00026864	0.580086778	-0.000001858
1.2	1.8	0.6000820454	0.5998	-0.00028205	0.600075878	-6.1674E-006
1.19	1.81	0.6200757902	0.61979	-0.00028579	0.620074983	-8.0763E-007
1.18	1.82	0.6400596071	0.63976	-0.00029961	0.640054078	-0.000005529
1.17	1.83	0.6600555312	0.65975	-0.00030553	0.660053183	-2.3485E-006
1.16	1.84	0.6800519768	0.67974	-0.00031198	0.680052287	3.1044E-007
1.15	1.85	0.700041065	0.69972	-0.000321065	0.700041387	3.2230E-007
1.14	1.86	0.7201805431	0.71985	-0.00033054	0.720180556	1.2507E-008
1.13	1.87	0.7401722763	0.73983	-0.00034228	0.740169656	-2.6206E-006
1.12	1.88	0.7601706591	0.75982	-0.000350659	0.76016876	-1.8988E-006
1.11	1.89	0.780154774	0.7798	-0.000354774	0.78015786	3.0864E-006
1.1	1.9	0.8001357224	0.79977	-0.00036572	0.800136956	1.2334E-006
1.09	1.91	0.8201311436	0.81976	-0.00037114	0.82013606	4.9168E-006
1.08	1.92	0.8401300106	0.83975	-0.00038001	0.840135165	5.1544E-006
1.07	1.93	0.8601197321	0.85972	-0.00039973	0.86011426	-5.4716E-006
1.06	1.94	0.8801039401	0.8797	-0.00040394	0.880103361	-5.7964E-007
1.05	1.95	0.9000907186	0.89968	-0.00041072	0.900092461	1.7419E-006
1.04	1.96	0.9200831037	0.91966	-0.0004231	0.920081561	-1.5431E-006
1.03	1.97	0.9400736634	0.93964	-0.00043366	0.940070661	-3.0027E-006
1.02	1.98	0.9600573126	0.95962	-0.00043731	0.960059761	0.000002448
1.01	1.99	0.980060352	0.97961	-0.000450352	0.980058865	-1.4868E-006
1	2	1.0001317132	0.99967	-0.00046171	1.000128002	-3.7115E-006
0.99	2.01	1.020196164	1.01973	-0.000466164	1.020197138	9.7417E-007
0.98	2.02	1.0401762929	1.0397	-0.00047629	1.040176234	-5.9193E-008
0.97	2.03	1.0601737816	1.05969	-0.00048378	1.060175338	1.5567E-006
0.96	2.04	1.0801564809	1.07966	-0.00049648	1.080154434	-2.0471E-006
0.95	2.05	1.1001464259	1.09964	-0.00050643	1.100143534	-2.8921E-006
0.94	2.06	1.120119812	1.11961	-0.000509812	1.120122629	2.8173E-006
0.93	2.07	1.1401197221	1.1396	-0.00051972	1.140121734	2.0118E-006
0.92	2.08	1.1601130571	1.15959	-0.00052306	1.160120838	7.7814E-006
0.91	2.09	1.1801062245	1.17957	-0.00053622	1.180109939	0.000003714
0.9	2.1	1.2000901904	1.19954	-0.00055019	1.200089034	-1.1564E-006
0.89	2.11	1.2200861704	1.21953	-0.00055617	1.220088139	1.9682E-006
0.88	2.12	1.2400723528	1.2395	-0.00057235	1.240067234	-5.1187E-006
0.87	2.13	1.2600590009	1.25948	-0.000579	1.260056334	-2.6668E-006
0.86	2.14	1.2800407689	1.27945	-0.00059077	1.28003543	-5.3393E-006
0.85	2.15	1.3002006244	1.2996	-0.00060062	1.300194607	-6.0173E-006
0.84	2.16	1.3201878499	1.31958	-0.00060785	1.320183707	-4.1428E-006
0.83	2.17	1.3401743118	1.33956	-0.00061431	1.340172807	-1.5046E-006
0.82	2.18	1.3601684477	1.35954	-0.00062845	1.360161907	-6.5405E-006
0.81	2.19	1.3801588211	1.37953	-0.00062882	1.380161012	2.1906E-006
0.8	2.2	1.4001487847	1.39951	-0.00063878	1.400150112	1.3271E-006
0.79	2.21	1.4201290626	1.41948	-0.00064906	1.420129207	1.4468E-007
0.78	2.22	1.4401206654	1.43946	-0.00066067	1.440118307	-0.000002358
0.77	2.23	1.4601219539	1.45945	-0.00067195	1.460117412	-4.5419E-006
0.76	2.24	1.4801147673	1.47944	-0.00067477	1.480116517	1.7492E-006
0.75	2.25	1.5000960697	1.49941	-0.00068607	1.500095612	-4.5766E-007
0.74	2.26	1.5200842638	1.51939	-0.00069426	1.520084712	4.4827E-007
0.73	2.27	1.540074544	1.53937	-0.000704544	1.540073812	-0.000000732
0.72	2.28	1.5600699466	1.55935	-0.00071995	1.560062912	-7.0345E-006
0.71	2.29	1.5802070219	1.57948	-0.00072702	1.58020208	-4.9414E-006

Sheet1

0.7	2.3	1.6002046038	1.59947	-0.0007346	1.600201185	-3.4187E-006
0.69	2.31	1.6201977525	1.61946	-0.00073775	1.62020029	2.5372E-006
0.68	2.32	1.6401867103	1.63943	-0.00075671	1.640179385	-7.3251E-006
0.67	2.33	1.6601744201	1.65941	-0.00076442	1.660168485	-5.9349E-006
0.66	2.34	1.6801649611	1.6794	-0.00076496	1.68016759	2.6286E-006
0.65	2.35	1.7001536209	1.69938	-0.00077362	1.70015669	3.0689E-006
0.64	2.36	1.720138127	1.71935	-0.000788127	1.720135785	-2.3417E-006
0.63	2.37	1.7401164491	1.73932	-0.00079645	1.740114881	-1.5683E-006
0.62	2.38	1.7601114605	1.7593	-0.00081146	1.760103981	-7.4796E-006
0.61	2.39	1.7801117431	1.7793	-0.00081174	1.78011309	1.3468E-006
0.6	2.4	1.8001070898	1.79928	-0.00082709	1.80010219	-4.8998E-006
0.59	2.41	1.820091093	1.81925	-0.000841093	1.820081285	-9.8075E-006
0.58	2.42	1.8400804978	1.83924	-0.0008405	1.84008039	-1.0772E-007
0.57	2.43	1.8602267746	1.85937	-0.00085677	1.860219558	-7.2162E-006
0.56	2.44	1.8802192155	1.87936	-0.00085922	1.880218663	-5.5251E-007
0.55	2.45	1.9001968484	1.89933	-0.00086685	1.900197759	9.1007E-007
0.54	2.46	1.9202005025	1.91932	-0.0008805	1.920196863	-3.6394E-006
0.53	2.47	1.9401912484	1.9393	-0.00089125	1.940185963	-5.2853E-006
0.52	2.48	1.9601850677	1.95929	-0.00089507	1.960185068	0
0.51	2.49	1.9801659789	1.97926	-0.00090598	1.980164163	-1.8157E-006
0.5	2.5	2.0001651254	1.99925	-0.00091513	2.000163268	-1.8576E-006
0.49	2.51	2.0201485511	2.01922	-0.00092855	2.020142363	-6.1878E-006
0.48	2.52	2.0401317906	2.0392	-0.00093179	2.040131463	-3.2723E-007
0.47	2.53	2.0601109695	2.05917	-0.00094097	2.060110559	-4.1066E-007
0.46	2.54	2.0801220741	2.07917	-0.00095207	2.080119668	-2.4062E-006
0.45	2.55	2.1001107153	2.09915	-0.00096072	2.100108768	-1.9473E-006
0.44	2.56	2.1200948674	2.11913	-0.00096487	2.120097868	3.0006E-006
0.43	2.57	2.1400782187	2.1391	-0.00097822	2.140076964	-1.2551E-006
0.42	2.58	2.1602222044	2.15923	-0.0009922	2.160216132	-6.0725E-006
0.41	2.59	2.1802174579	2.17922	-0.00099746	2.180215236	-2.2215E-006
0.4	2.6	2.2002036031	2.1992	-0.0010036	2.200204337	7.3338E-007
0.39	2.61	2.2202007007	2.21918	-0.0010207	2.220193437	-7.2641E-006
0.38	2.62	2.2401995491	2.23917	-0.00102955	2.240192541	-0.000007008
0.37	2.63	2.2601870354	2.25915	-0.00103704	2.260181641	-5.3943E-006
0.36	2.64	2.2801718023	2.27913	-0.0010418	2.280170741	-1.0611E-006
0.35	2.65	2.3001622502	2.29911	-0.00105225	2.300159841	-2.4089E-006
0.34	2.66	2.320151506	2.31909	-0.001061506	2.320148941	-2.5647E-006
0.33	2.67	2.3401375022	2.33907	-0.0010675	2.340138041	5.3915E-007
0.32	2.68	2.3601198476	2.35904	-0.00107985	2.360117137	-2.7108E-006
0.31	2.69	2.3801072966	2.37902	-0.0010873	2.380106237	-1.0598E-006
0.3	2.7	2.4001096841	2.39901	-0.00109968	2.400105341	-4.3426E-006
0.29	2.71	2.4201051053	2.419	-0.00110511	2.420104446	-6.5923E-007
0.28	2.72	2.4402395729	2.43912	-0.00111957	2.44023361	-5.9631E-006
0.27	2.73	2.460227171	2.4591	-0.001127171	2.46022271	-4.4611E-006
0.26	2.74	2.4802233931	2.47909	-0.00113339	2.480221814	-1.5786E-006
0.25	2.75	2.5	2.49907	-0.00093	2.500210915	0.000210915

ymin	-2.05996511	xmin	-2.05903	slope:
ymax	1.960185068	xmax	1.95929	intercept:



1.000455457
2.6947E-006

