

**Supplementary Material Table S1– Details of the 1D Shafting System Models**

Model Data:		R		
Node No	Coord. X (m)	Coord. Y (m)	Coord. Z (m)	
1	0	0	0	
2	0.197	0	0	
3	0.395	0	0	
4	0.965	0	0	
5	1.475	0	0	
6	1.967	0	0	
7	2.137	0	0	
8	2.987	0	0	
9	3.067	0	0	
10	5.697	0	0	
11	6.031	0	0	
12	6.207	0	0	
13	6.407	0	0	
14	6.507	0	0	
15	6.607	0	0	
16	6.961	0	0	
17	7.052	0	0	
18	7.192	0	0	
19	7.332	0	0	
20	7.508	0	0	
21	8.008	0	0	
22	11.413	0	0	
23	12.413	0	0	
24	12.513	0	0	
25	12.578	0	0	
26	12.62	0	0	
27	12.907	0	0	
28	13.161	0	0	
29	13.267	0	0	
30	13.299	0	0	
31	13.373	0	0	
32	13.662	0	0	
33	13.889	0	0	
34	14.087	0	0	

35	14.285	0	0			
36	14.512	0	0			
37	14.739	0	0			
38	14.937	0	0			
39	15.135	0	0			
40	15.362	0	0			
41	15.589	0	0			
42	15.787	0	0			
43	15.985	0	0			
44	16.212	0	0			
45	16.439	0	0			
46	16.637	0	0			
47	16.835	0	0			
48	17.062	0	0			
Beam Member No	Length (m)	Distr. Weight (kg/m)	Total Weight (kg)	Moment of Inertia (m4)	Young's Modulus (N/m2)	
1	0.197	-7225.25	-1423.37	0.00092	2.10E+11	
2	0.198	-7225.25	-1430.6	0.00092	2.10E+11	
3	0.57	-10974.4	-6255.38	0.002122	2.10E+11	
4	0.51	-12414.6	-6331.45	0.002716	2.10E+11	
5	0.492	-14028	-6901.8	0.003321	2.10E+11	
6	0.17	-14028	-2384.77	0.003321	2.10E+11	
7	0.85	-14028	-11923.8	0.003321	2.10E+11	
8	0.08	-14028	-1122.24	0.003321	2.10E+11	
9	2.63	-13483.3	-35461.1	0.003068	2.10E+11	
10	0.334	-14193.6	-4740.65	0.0034	2.10E+11	
11	0.176	-15120.6	-2661.22	0.003068	2.10E+11	
12	0.2	-15120.6	-3024.12	0.003068	2.10E+11	
13	0.1	-48990.7	-4899.07	0.032206	2.10E+11	
14	0.1	-48990.7	-4899.07	0.032206	2.10E+11	
15	0.354	-10669.1	-3776.86	0.001527	2.10E+11	
16	0.091	-11183.2	-1017.67	0.001678	2.10E+11	
17	0.14	-11183.2	-1565.65	0.001678	2.10E+11	
18	0.14	-11183.2	-1565.65	0.001678	2.10E+11	
19	0.176	-11183.2	-1968.24	0.001678	2.10E+11	
20	0.5	-10669.1	-5334.54	0.001527	2.10E+11	
21	3.405	-10669.1	-36328.2	0.001527	2.10E+11	

22	1	-10669.1	-10669.1	0.001527	2.10E+11	
23	0.1	-48990.7	-4899.07	0.032206	2.10E+11	
24	0.065	-48990.7	-3184.39	0.032206	2.10E+11	
25	0.042	-67958	-2854.23	0.061972	2.10E+11	
26	0.287	-21773.6	-6249.03	0.006362	2.10E+11	
27	0.254	-21773.6	-5530.5	0.006362	2.10E+11	
28	0.106	-73183.6	-7757.46	0.071869	2.10E+11	
29	0.032	-73183.6	-2341.88	0.071869	2.10E+11	
30	0.074	-73183.6	-5415.59	0.071869	2.10E+11	
31	0.289	-21773.6	-6292.58	0.006362	2.10E+11	
32	0.227	0	0	0.000541	2.10E+11	
33	0.198	0	0	0.000541	2.10E+11	
34	0.198	0	0	0.000541	2.10E+11	
35	0.227	0	0	0.000541	2.10E+11	
36	0.227	0	0	0.000541	2.10E+11	
37	0.198	0	0	0.000541	2.10E+11	
38	0.198	0	0	0.000541	2.10E+11	
39	0.227	0	0	0.000541	2.10E+11	
40	0.227	0	0	0.000541	2.10E+11	
41	0.198	0	0	0.000541	2.10E+11	
42	0.198	0	0	0.000541	2.10E+11	
43	0.227	0	0	0.000541	2.10E+11	
44	0.227	0	0	0.000541	2.10E+11	
45	0.198	0	0	0.000541	2.10E+11	
46	0.198	0	0	0.000541	2.10E+11	
47	0.227	0	0	0.000541	2.10E+11	
Forces						
Node No	Fx (N)	Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)
1	0	-8504.25	0	0	0	0.003367
2	0	-1459.45	0	0	0	-0.00402
3	0	-125225	0	0	0	-0.00785
4	0	0.028327	0	0	0	-0.00415
5	0	0.028675	0	0	0	0.006706
6	0	233748	0	0	0	0.009561
7	0	-0.01188	0	0	0	0.002215
8	0	-0.10667	0	0	0	-0.00746
9	0	0.104194	0	0	0	-0.00125

10	0	0.007725	0	0	0	0.000418
11	0	-0.03005	0	0	0	-0.00023
12	0	0.025484	0	0	0	-0.00013
13	0	-0.11134	0	0	0	-0.04832
14	0	0.191097	0	0	0	0.059349
15	0	-0.08223	0	0	0	-0.0148
16	0	-0.00263	0	0	0	0.000604
17	0	38783.5	0	0	0	-0.00097
18	0	-0.00974	0	0	0	-0.00017
19	0	0.022521	0	0	0	-0.00012
20	0	-0.01698	0	0	0	-0.00065
21	0	0.005382	0	0	0	-0.00092
22	0	0.000223	0	0	0	0.000187
23	0	0.000141	0	0	0	0.000526
24	0	-29204	0	0	0	0.000152
25	0	0.000967	0	0	0	-0.00878
26	0	-318.778	0	0	0	0.008422
27	0	-0.00037	0	0	0	-9.10E-05
28	0	79100	0	0	0	-1.36E-05
29	0	-0.00042	0	0	0	0.0009
30	0	0.000745	0	0	0	-0.00123
31	0	61054.9	0	0	0	0.000319
32	0	2.54E-05	0	0	0	-6.60E-06
33	0	-91400	0	0	0	1.23E-06
34	0	-5.01E-06	0	0	0	-1.58E-06
35	0	85853.4	0	0	0	-1.04E-07
36	0	2.45E-07	0	0	0	4.79E-08
37	0	-91400	0	0	0	-1.33E-08
38	0	6.16E-07	0	0	0	-3.39E-07
39	0	89076.4	0	0	0	-3.50E-08
40	0	3.61E-07	0	0	0	5.24E-08
41	0	-91400	0	0	0	-1.91E-08
42	0	2.01E-07	0	0	0	4.14E-08
43	0	107812	0	0	0	3.69E-08
44	0	-8.17E-08	0	0	0	2.10E-08
45	0	-91400	0	0	0	-1.12E-08
46	0	6.04E-08	0	0	0	-1.43E-08

47	0	35092.8	0	0	0	1.58E-09
48	0	-4.93E-09	0	0	0	7.35E-10
<b>Displacements</b>						
Node No	Ux (m)	Uy (m)	Uz (m)	Rx (rad)	Ry (rad)	Rz (rad)
1	0	-0.0012	0	0	0	0.000694
2	0	-0.00106	0	0	0	0.000693
3	0	-0.00092	0	0	0	0.00069
4	0	-0.00053	0	0	0	0.000634
5	0	-0.00023	0	0	0	0.000524
6	0	0	0	0	0	0.000385
7	0	5.99E-05	0	0	0	0.000329
8	0	0.000231	0	0	0	9.37E-05
9	0	0.000238	0	0	0	7.50E-05
10	0	-0.00019	0	0	0	-0.00032
11	0	-0.0003	0	0	0	-0.00034
12	0	-0.00036	0	0	0	-0.00035
13	0	-0.00043	0	0	0	-0.00036
14	0	-0.00047	0	0	0	-0.00036
15	0	-0.0005	0	0	0	-0.00036
16	0	-0.00063	0	0	0	-0.00039
17	0	-0.00067	0	0	0	-0.0004
18	0	-0.00073	0	0	0	-0.00041
19	0	-0.00079	0	0	0	-0.00042
20	0	-0.00086	0	0	0	-0.00043
21	0	-0.00108	0	0	0	-0.00043
22	0	-0.00211	0	0	0	-0.00011
23	0	-0.00216	0	0	0	-3.58E-06
24	0	-0.00216	0	0	0	-3.22E-06
25	0	-0.00216	0	0	0	-3.01E-06
26	0	-0.00216	0	0	0	-2.95E-06
27	0	-0.00216	0	0	0	-1.07E-06
28	0	-0.00216	0	0	0	-2.74E-06
29	0	-0.00216	0	0	0	-2.86E-06
30	0	-0.00216	0	0	0	-2.90E-06
31	0	-0.00216	0	0	0	-2.98E-06
32	0	-0.00216	0	0	0	-5.11E-06
33	0	-0.00216	0	0	0	4.52E-07

34	0	-0.00216	0	0	0	7.23E-06
35	0	-0.00216	0	0	0	-1.06E-06
36	0	-0.00216	0	0	0	-9.62E-06
37	0	-0.00217	0	0	0	9.75E-07
38	0	-0.00216	0	0	0	1.01E-05
39	0	-0.00216	0	0	0	2.21E-06
40	0	-0.00216	0	0	0	-7.49E-06
41	0	-0.00216	0	0	0	9.08E-07
42	0	-0.00216	0	0	0	7.24E-06
43	0	-0.00216	0	0	0	-4.21E-06
44	0	-0.00216	0	0	0	-1.48E-05
45	0	-0.00217	0	0	0	2.45E-07
46	0	-0.00217	0	0	0	1.84E-05
47	0	-0.00216	0	0	0	2.45E-05
48	0	-0.00215	0	0	0	2.45E-05

**Influence Factors (Prototype Model R):**

s(1,1)= -5388.83	s(1,2)= 12901.4	s(1,3)= -27222.9	s(1,4)= 20245.4	s(1,5)= -640.136	s(1,6)= 126.945	s(1,7)= -25.5169	s(1,8)= 3.6436
s(2,1)= 12901.4	s(2,2)= -36821.8	s(2,3)= 116251	s(2,4)= -94837.1	s(2,5)= 2998.64	s(2,6)= -594.662	s(2,7)= 119.574	s(2,8)= -17.1445
s(3,1)= -27222.9	s(3,2)= 116251	s(3,3)= -2.1868E+06	s(3,4)= 3.6770E+06	s(3,5)= -1.8894E+06	s(3,6)= 374689	s(3,7)= -75344.8	s(3,8)= 10805.2
s(4,1)= 20245.4	s(4,2)= -94837.1	s(4,3)= 3.6770E+06	s(4,4)= -6.9362E+06	s(4,5)= 4.2448E+06	s(4,6)= -1.1006E+06	s(4,7)= 221307	s(4,8)= -31737.8
s(5,1)= -640.136	s(5,2)= 2998.64	s(5,3)= -1.8894E+06	s(5,4)= 4.2448E+06	s(5,5)= -3.6799E+06	s(5,6)= 1.8657E+06	s(5,7)= -634536	s(5,8)= 90999.1
s(6,1)= 126.946	s(6,2)= -594.663	s(6,3)= 374689	s(6,4)= -1.1006E+06	s(6,5)= 1.8657E+06	s(6,6)= -2.2266E+06	s(6,7)= 1.4852+06	s(6,8)= -397969
s(7,1)= -25.527	s(7,2)= 119.579	s(7,3)= -75344.8	s(7,4)= 221307	s(7,5)= -634536	s(7,6)= 1.4852E+06	s(7,7)= -1.5955E+06	s(7,8)= 598759
s(8,1)= 3.66085	s(8,2)= -17.1488	s(8,3)= 10805.2	s(8,4)= -31737.8	s(8,5)= 90999.1	s(8,6)= -397969	s(8,7)= 598759	s(8,8)= -270843

Model Data:		M		
Node No	Coord. X (m)	Coord. Y (m)	Coord. Z (m)	
1	0	0	0	
2	0.026	0	0	
3	0.053	0	0	
4	0.129	0	0	
5	0.197	0	0	
6	0.263	0	0	
7	0.286	0	0	
8	0.4	0	0	
9	0.411	0	0	
10	0.763	0	0	
11	0.808	0	0	
12	0.832	0	0	
13	0.859	0	0	
14	0.872	0	0	
15	0.885	0	0	
16	0.932	0	0	
17	0.944	0	0	
18	0.963	0	0	
19	0.982	0	0	
20	1.006	0	0	
21	1.073	0	0	
22	1.529	0	0	
23	1.663	0	0	
24	1.676	0	0	
25	1.685	0	0	
26	1.691	0	0	
27	1.729	0	0	
28	1.763	0	0	
29	1.777	0	0	
30	1.781	0	0	
31	1.791	0	0	
32	1.83	0	0	
33	1.86	0	0	
34	1.887	0	0	
35	1.914	0	0	
36	1.944	0	0	
37	1.974	0	0	
38	2.001	0	0	

39	2.028	0	0			
40	2.058	0	0			
41	2.088	0	0			
42	2.115	0	0			
43	2.142	0	0			
44	2.172	0	0			
45	2.202	0	0			
46	2.229	0	0			
47	2.256	0	0			
48	2.286	0	0			
Beam Member No	Length (m)	Distr. Weight (kg/m)	Total Weight (kg)	Moment of Inertia (m4)	Young's Modulus (N/m2)	
1	0.026	-19.896	-0.5173	5.31E-09	2.10E+11	
2	0.027	-19.896	-0.53719	5.31E-09	2.10E+11	
3	0.076	-30.22	-2.29672	1.23E-08	2.10E+11	
4	0.068	-34.186	-2.32465	1.57E-08	2.10E+11	
5	0.066	-37.801	-2.49487	1.92E-08	2.10E+11	
6	0.023	-37.801	-0.86942	1.92E-08	2.10E+11	
7	0.114	-37.801	-4.30931	1.92E-08	2.10E+11	
8	0.011	-37.801	-0.41581	1.92E-08	2.10E+11	
9	0.352	-36.334	-12.7896	1.77E-08	2.10E+11	
10	0.045	-38.247	-1.72112	1.96E-08	2.10E+11	
11	0.024	-36.334	-0.87202	1.77E-08	2.10E+11	
12	0.027	-36.334	-0.98102	1.77E-08	2.10E+11	
13	0.013	-117.721	-1.53037	1.86E-07	2.10E+11	
14	0.013	-117.721	-1.53037	1.86E-07	2.10E+11	
15	0.047	-25.637	-1.20494	8.82E-09	2.10E+11	
16	0.012	-26.872	-0.32246	9.69E-09	2.10E+11	
17	0.019	-26.872	-0.51057	9.69E-09	2.10E+11	
18	0.019	-26.872	-0.51057	9.69E-09	2.10E+11	
19	0.024	-26.872	-0.64493	9.69E-09	2.10E+11	
20	0.067	-25.637	-1.71768	8.82E-09	2.10E+11	
21	0.456	-25.637	-11.6905	8.82E-09	2.10E+11	
22	0.134	-25.637	-3.43536	8.82E-09	2.10E+11	
23	0.013	-117.721	-1.53037	1.86E-07	2.10E+11	
24	0.009	-117.721	-1.05949	1.86E-07	2.10E+11	
25	0.006	-163.298	-0.97979	3.58E-07	2.10E+11	
26	0.038	-52.32	-1.98816	3.67E-08	2.10E+11	
27	0.034	-52.32	-1.77888	3.67E-08	2.10E+11	
28	0.014	-175.855	-2.46197	4.15E-07	2.10E+11	



29	0.004	-175.855	-0.70342	4.15E-07	2.10E+11	
30	0.01	-175.855	-1.75855	4.15E-07	2.10E+11	
31	0.039	-52.32	-2.04048	3.67E-08	2.10E+11	
32	0.03	0	0	3.12E-09	2.10E+11	
33	0.027	0	0	3.12E-09	2.10E+11	
34	0.027	0	0	3.12E-09	2.10E+11	
35	0.03	0	0	3.12E-09	2.10E+11	
36	0.03	0	0	3.12E-09	2.10E+11	
37	0.027	0	0	3.12E-09	2.10E+11	
38	0.027	0	0	3.12E-09	2.10E+11	
39	0.03	0	0	3.12E-09	2.10E+11	
40	0.03	0	0	3.12E-09	2.10E+11	
41	0.027	0	0	3.12E-09	2.10E+11	
42	0.027	0	0	3.12E-09	2.10E+11	
43	0.03	0	0	3.12E-09	2.10E+11	
44	0.03	0	0	3.12E-09	2.10E+11	
45	0.027	0	0	3.12E-09	2.10E+11	
46	0.027	0	0	3.12E-09	2.10E+11	
47	0.03	0	0	3.12E-09	2.10E+11	
Forces						
Node No	Fx (N)	Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)
1	0	-1.00002	0	0	0	-2.46E-07
2	0	-0.17	0	0	0	-4.22E-07
3	0	-14.75	0	0	0	-2.82E-07
4	0	3.61E-06	0	0	0	2.22E-08
5	0	-3.45E-06	0	0	0	1.10E-08
6	0	39.7586	0	0	0	9.11E-09
7	0	-3.23E-06	0	0	0	2.30E-08
8	0	-2.05E-05	0	0	0	-5.54E-08
9	0	2.06E-05	0	0	0	-1.67E-07
10	0	8.77E-06	0	0	0	1.92E-07
11	0	7.92E-06	0	0	0	4.08E-07
12	0	-2.61E-05	0	0	0	1.07E-07
13	0	9.55E-06	0	0	0	-9.51E-07
14	0	3.39E-05	0	0	0	1.42E-06
15	0	-3.52E-05	0	0	0	-2.10E-07
16	0	2.93E-06	0	0	0	-3.15E-08
17	0	25.771	0	0	0	1.01E-08
18	0	-4.16E-07	0	0	0	-6.22E-09
19	0	2.39E-06	0	0	0	-1.38E-08
20	0	-1.21E-06	0	0	0	2.09E-08

21	0	4.81E-08	0	0	0	-3.28E-09
22	0	1.85E-08	0	0	0	1.58E-09
23	0	-2.61E-08	0	0	0	1.25E-08
24	0	-3.44	0	0	0	-1.84E-08
25	0	-2.37E-07	0	0	0	-3.38E-08
26	0	-7.45277	0	0	0	3.45E-08
27	0	3.30E-08	0	0	0	-3.53E-10
28	0	9.32	0	0	0	2.29E-09
29	0	-1.08E-06	0	0	0	1.13E-08
30	0	5.24E-07	0	0	0	4.14E-09
31	0	26.3627	0	0	0	-1.19E-08
32	0	3.17E-09	0	0	0	3.23E-10
33	0	-10.77	0	0	0	-7.46E-11
34	0	1.25E-08	0	0	0	-1.35E-11
35	0	8.71621	0	0	0	1.31E-10
36	0	-3.14E-09	0	0	0	6.64E-12
37	0	-10.77	0	0	0	3.05E-11
38	0	-4.82E-09	0	0	0	3.42E-11
39	0	10.7165	0	0	0	-2.65E-13
40	0	-1.49E-09	0	0	0	-6.79E-12
41	0	-10.77	0	0	0	-1.82E-12
42	0	-8.65E-10	0	0	0	1.09E-11
43	0	12.7782	0	0	0	-6.47E-13
44	0	4.03E-11	0	0	0	1.11E-12
45	0	-10.77	0	0	0	1.08E-12
46	0	3.30E-11	0	0	0	1.20E-12
47	0	3.99744	0	0	0	6.77E-13
48	0	-1.18E-11	0	0	0	-9.66E-15
<b>Displacements</b>						
Node No	Ux (m)	Uy (m)	Uz (m)	Rx (rad)	Ry (rad)	Rz (rad)
1	0	-4.04E-05	0	0	0	0.000191
2	0	-3.54E-05	0	0	0	0.000191
3	0	-3.03E-05	0	0	0	0.00019
4	0	-1.64E-05	0	0	0	0.000167
5	0	-6.35E-06	0	0	0	0.000123
6	0	0	0	0	0	6.41E-05
7	0	1.19E-06	0	0	0	4.02E-05
8	0	1.02E-07	0	0	0	-5.18E-05
9	0	-5.09E-07	0	0	0	-5.86E-05
10	0	-4.86E-05	0	0	0	-0.00019
11	0	-5.77E-05	0	0	0	-0.00021

12	0	-6.28E-05	0	0	0	-0.00022
13	0	-6.87E-05	0	0	0	-0.00023
14	0	-7.17E-05	0	0	0	-0.00023
15	0	-7.47E-05	0	0	0	-0.00023
16	0	-8.66E-05	0	0	0	-0.00028
17	0	-9.00E-05	0	0	0	-0.00029
18	0	-9.58E-05	0	0	0	-0.00031
19	0	-0.0001	0	0	0	-0.00033
20	0	-0.00011	0	0	0	-0.00035
21	0	-0.00014	0	0	0	-0.00039
22	0	-0.00028	0	0	0	-0.00014
23	0	-0.00029	0	0	0	-6.49E-06
24	0	-0.00029	0	0	0	-5.96E-06
25	0	-0.00029	0	0	0	-5.60E-06
26	0	-0.00029	0	0	0	-5.49E-06
27	0	-0.00029	0	0	0	-1.78E-07
28	0	-0.00029	0	0	0	1.40E-06
29	0	-0.00029	0	0	0	1.38E-06
30	0	-0.00029	0	0	0	1.37E-06
31	0	-0.00029	0	0	0	1.33E-06
32	0	-0.00029	0	0	0	7.19E-09
33	0	-0.00029	0	0	0	-5.54E-07
34	0	-0.00029	0	0	0	1.02E-06
35	0	-0.00029	0	0	0	-1.74E-06
36	0	-0.00029	0	0	0	-3.91E-06
37	0	-0.00029	0	0	0	5.27E-07
38	0	-0.00029	0	0	0	4.19E-06
39	0	-0.00029	0	0	0	1.24E-06
40	0	-0.00029	0	0	0	-2.45E-06
41	0	-0.00029	0	0	0	4.05E-07
42	0	-0.00029	0	0	0	2.58E-06
43	0	-0.00029	0	0	0	-1.93E-06
44	0	-0.00029	0	0	0	-5.99E-06
45	0	-0.00029	0	0	0	-7.67E-07
46	0	-0.00029	0	0	0	5.90E-06
47	0	-0.00029	0	0	0	8.12E-06
48	0	-0.00029	0	0	0	8.12E-06

**Influence Factors (Scaled Model M):**

s(1,1)= -13.0443	s(1,2)= 31.301	s(1,3)= -69.5587	s(1,4)= 55.0107	s(1,5)= -4.59792	s(1,6)= 1.11613	s(1,7)= -0.271302	s(1,8)= 0.0443906
---------------------	-------------------	---------------------	--------------------	---------------------	--------------------	----------------------	----------------------

s(2,1)= 31.301	s(2,2)= -89.4704	s(2,3)= 297.023	s(2,4)= -256.121	s(2,5)= 21.4072	s(2,6)= -5.19653	s(2,7)= 1.26315	s(2,8)= -0.206612
s(3,1)= -69.5587	s(3,2)= 297.023	s(3,3)= -6367.77	s(3,4)= 10993.1	s(3,5)= -6016.29	s(3,6)= 1460.44	s(3,7)= -354.995	s(3,8)= 58.063
s(4,1)= 55.0107	s(4,2)= -256.121	s(4,3)= 10993.1	s(4,4)= -20923.4	s(4,5)= 13219	s(4,6)= -3875.65	s(4,7)= 942.071	s(4,8)= -154.085
s(5,1)= -4.59792	s(5,2)= 21.4072	s(5,3)= -6016.29	s(5,4)= 13219	s(5,5)= -11202.5	s(5,6)= 5690.16	s(5,7)= -2041.09	s(5,8)= 333.84
s(6,1)= 1.11613	s(6,2)= -5.19653	s(6,3)= 1460.44	s(6,4)= -3875.65	s(6,5)= 5690.16	s(6,6)= -6313.05	s(6,7)= 4166.36	s(6,8)= -1124.17
s(7,1)= -0.271303	s(7,2)= 1.26314	s(7,3)= -354.995	s(7,4)= 942.071	s(7,5)= -2041.09	s(7,6)= 4166.36	s(7,7)= -4302.51	s(7,8)= 1589.17
s(8,1)= 0.0443744	s(8,2)= -0.2066	s(8,3)= 58.063	s(8,4)= -154.085	s(8,5)= 333.84	s(8,6)= -1124.17	s(8,7)= 1589.17	s(8,8)= -702.649

Model Data:		Model		
Node No	Coord. X (m)	Coord. Y (m)	Coord. Z (m)	
1	0	0	0	
2	0.031	0	0	
3	0.062	0	0	
4	0.141	0	0	
5	0.209	0	0	
6	0.272	0	0	
7	0.294	0	0	
8	0.404	0	0	
9	0.414	0	0	
10	0.758	0	0	
11	0.801	0	0	
12	0.825	0	0	
13	0.852	0	0	
14	0.861	0	0	
15	0.87	0	0	
16	0.924	0	0	
17	0.938	0	0	
18	0.959	0	0	
19	0.98	0	0	
20	1.006	0	0	
21	1.082	0	0	
22	1.601	0	0	
23	1.753	0	0	
24	1.762	0	0	
25	1.768	0	0	

26	1.771	0	0			
27	1.805	0	0			
28	1.836	0	0			
29	1.845	0	0			
30	1.848	0	0			
31	1.854	0	0			
32	1.893	0	0			
33	1.923	0	0			
34	1.95	0	0			
35	1.977	0	0			
36	2.007	0	0			
37	2.037	0	0			
38	2.064	0	0			
39	2.091	0	0			
40	2.121	0	0			
41	2.151	0	0			
42	2.178	0	0			
43	2.205	0	0			
44	2.235	0	0			
45	2.265	0	0			
46	2.292	0	0			
47	2.319	0	0			
48	2.349	0	0			
Beam Member No	Length (m)	Distr. Weight (kg/m)	Total Weight (kg)	Moment of Inertia (m4)	Young's Modulus (N/m2)	
1	0.031	-37.801	-1.17183	1.92E-08	2.10E+11	
2	0.031	-37.801	-1.17183	1.92E-08	2.10E+11	
3	0.079	-37.801	-2.98628	1.92E-08	2.10E+11	
4	0.068	-37.801	-2.57047	1.92E-08	2.10E+11	
5	0.063	-37.801	-2.38146	1.92E-08	2.10E+11	
6	0.022	-37.801	-0.83162	1.92E-08	2.10E+11	
7	0.11	-37.801	-4.15811	1.92E-08	2.10E+11	
8	0.01	-37.801	-0.37801	1.92E-08	2.10E+11	
9	0.344	-37.801	-13.0035	1.92E-08	2.10E+11	
10	0.043	-37.801	-1.62544	1.92E-08	2.10E+11	
11	0.024	-37.801	-0.90722	1.92E-08	2.10E+11	
12	0.027	-37.801	-1.02063	1.92E-08	2.10E+11	
13	0.009	-37.801	-0.34021	1.92E-08	2.10E+11	
14	0.009	-37.801	-0.34021	1.92E-08	2.10E+11	
15	0.054	-37.801	-2.04125	1.92E-08	2.10E+11	

16	0.014	-37.801	-0.52921	1.92E-08	2.10E+11		
17	0.021	-37.801	-0.79382	1.92E-08	2.10E+11		
18	0.021	-37.801	-0.79382	1.92E-08	2.10E+11		
19	0.026	-37.801	-0.98283	1.92E-08	2.10E+11		
20	0.076	-37.801	-2.87288	1.92E-08	2.10E+11		
21	0.519	-37.801	-19.6187	1.92E-08	2.10E+11		
22	0.152	-37.801	-5.74575	1.92E-08	2.10E+11		
23	0.009	-37.801	-0.34021	1.92E-08	2.10E+11		
24	0.006	-37.801	-0.22681	1.92E-08	2.10E+11		
25	0.003	-37.801	-0.1134	1.92E-08	2.10E+11		
26	0.034	-37.801	-1.28523	1.92E-08	2.10E+11		
27	0.031	-37.801	-1.17183	1.92E-08	2.10E+11		
28	0.009	-37.801	-0.34021	1.92E-08	2.10E+11		
29	0.003	-37.801	-0.1134	1.92E-08	2.10E+11		
30	0.006	-37.801	-0.22681	1.92E-08	2.10E+11		
31	0.039	-37.801	-1.47424	1.92E-08	2.10E+11		
32	0.03	0	0	1.92E-08	2.10E+11		
33	0.027	0	0	1.92E-08	2.10E+11		
34	0.027	0	0	1.92E-08	2.10E+11		
35	0.03	0	0	1.92E-08	2.10E+11		
36	0.03	0	0	1.92E-08	2.10E+11		
37	0.027	0	0	1.92E-08	2.10E+11		
38	0.027	0	0	1.92E-08	2.10E+11		
39	0.03	0	0	1.92E-08	2.10E+11		
40	0.03	0	0	1.92E-08	2.10E+11		
41	0.027	0	0	1.92E-08	2.10E+11		
42	0.027	0	0	1.92E-08	2.10E+11		
43	0.03	0	0	1.92E-08	2.10E+11		
44	0.03	0	0	1.92E-08	2.10E+11		
45	0.027	0	0	1.92E-08	2.10E+11		
46	0.027	0	0	1.92E-08	2.10E+11		
47	0.03	0	0	1.92E-08	2.10E+11		
Forces							
Node No	Fx (N)	Fy (N)	Fz (N)	Mx (Nm)	My (Nm)		Mz (Nm)
1	0	-35.0003	0	0	0		-4.34E-06
2	0	0.000203	0	0	0		-6.46E-06
3	0	0.000106	0	0	0		-1.11E-06
4	0	-3.73E-05	0	0	0		-5.24E-07
5	0	2.61E-05	0	0	0		-9.94E-07
6	0	72.1484	0	0	0		-6.71E-07
7	0	3.51E-05	0	0	0		-1.45E-07

8	0	-0.0004	0	0	0	-2.02E-06
9	0	0.000398	0	0	0	-1.93E-06
10	0	4.86E-06	0	0	0	1.12E-07
11	0	-9.60E-05	0	0	0	-9.80E-07
12	0	0.000136	0	0	0	-4.94E-07
13	0	-1.37E-05	0	0	0	9.27E-07
14	0	-0.00013	0	0	0	-5.19E-07
15	0	0.000109	0	0	0	-2.49E-07
16	0	-3.77E-06	0	0	0	1.98E-07
17	0	16.7495	0	0	0	-9.65E-08
18	0	-3.21E-06	0	0	0	-2.31E-07
19	0	1.23E-05	0	0	0	7.68E-09
20	0	-3.12E-06	0	0	0	-7.13E-08
21	0	1.20E-06	0	0	0	-3.16E-08
22	0	-9.77E-08	0	0	0	4.33E-10
23	0	-6.56E-07	0	0	0	-2.36E-08
24	0	-3.44	0	0	0	2.88E-08
25	0	-1.74E-06	0	0	0	-9.68E-09
26	0	3.72632	0	0	0	-3.80E-09
27	0	1.67E-08	0	0	0	5.66E-10
28	0	9.32	0	0	0	-7.52E-10
29	0	1.16E-07	0	0	0	-1.15E-08
30	0	3.50E-07	0	0	0	1.32E-08
31	0	13.0111	0	0	0	-5.39E-09
32	0	8.21E-08	0	0	0	-5.33E-10
33	0	-10.77	0	0	0	1.22E-09
34	0	-2.05E-08	0	0	0	9.55E-10
35	0	11.0443	0	0	0	8.71E-10
36	0	-8.15E-09	0	0	0	4.13E-11
37	0	-10.77	0	0	0	1.84E-10
38	0	5.77E-09	0	0	0	3.48E-10
39	0	10.2181	0	0	0	1.06E-10
40	0	-3.71E-09	0	0	0	-4.86E-11
41	0	-10.77	0	0	0	-5.79E-12
42	0	-6.40E-09	0	0	0	4.64E-11
43	0	12.867	0	0	0	-8.97E-12
44	0	-1.43E-09	0	0	0	-6.49E-12
45	0	-10.77	0	0	0	-4.09E-12
46	0	-2.45E-10	0	0	0	-1.98E-12
47	0	3.99255	0	0	0	5.13E-12
48	0	-1.19E-10	0	0	0	-1.27E-13

Displacements						
Node No	Ux (m)	Uy (m)	Uz (m)	Rx (rad)	Ry (rad)	Rz (rad)
1	0	-0.00017	0	0	0	0.000743
2	0	-0.00015	0	0	0	0.000739
3	0	-0.00013	0	0	0	0.000726
4	0	-7.05E-05	0	0	0	0.000653
5	0	-2.96E-05	0	0	0	0.000539
6	0	0	0	0	0	0.00039
7	0	7.93E-06	0	0	0	0.000332
8	0	3.03E-05	0	0	0	8.71E-05
9	0	3.10E-05	0	0	0	6.82E-05
10	0	-2.48E-05	0	0	0	-0.00032
11	0	-3.91E-05	0	0	0	-0.00034
12	0	-4.74E-05	0	0	0	-0.00035
13	0	-5.71E-05	0	0	0	-0.00037
14	0	-6.04E-05	0	0	0	-0.00037
15	0	-6.38E-05	0	0	0	-0.00037
16	0	-8.45E-05	0	0	0	-0.00039
17	0	-9.00E-05	0	0	0	-0.0004
18	0	-9.84E-05	0	0	0	-0.0004
19	0	-0.00011	0	0	0	-0.00041
20	0	-0.00012	0	0	0	-0.00041
21	0	-0.00015	0	0	0	-0.00041
22	0	-0.00028	0	0	0	-7.92E-05
23	0	-0.00029	0	0	0	-9.01E-06
24	0	-0.00029	0	0	0	-6.75E-06
25	0	-0.00029	0	0	0	-5.40E-06
26	0	-0.00029	0	0	0	-4.78E-06
27	0	-0.00029	0	0	0	1.34E-07
28	0	-0.00029	0	0	0	1.11E-06
29	0	-0.00029	0	0	0	8.23E-07
30	0	-0.00029	0	0	0	6.98E-07
31	0	-0.00029	0	0	0	4.07E-07
32	0	-0.00029	0	0	0	-5.53E-07
33	0	-0.00029	0	0	0	5.44E-08
34	0	-0.00029	0	0	0	5.73E-07
35	0	-0.00029	0	0	0	4.04E-08
36	0	-0.00029	0	0	0	-5.52E-07
37	0	-0.00029	0	0	0	2.57E-08
38	0	-0.00029	0	0	0	5.70E-07
39	0	-0.00029	0	0	0	1.12E-07



40	0	-0.00029	0	0	0	-4.30E-07
41	0	-0.00029	0	0	0	7.33E-08
42	0	-0.00029	0	0	0	4.46E-07
43	0	-0.00029	0	0	0	-2.84E-07
44	0	-0.00029	0	0	0	-9.50E-07
45	0	-0.00029	0	0	0	-1.01E-07
46	0	-0.00029	0	0	0	9.83E-07
47	0	-0.00029	0	0	0	1.34E-06
48	0	-0.00029	0	0	0	1.34E-06

**Influence Factors (Equivalent Model):**

s(1,1)= -20.7887	s(1,2)= 44.9881	s(1,3)= -114.898	s(1,4)= 103.13	s(1,5)= -15.863	s(1,6)= 4.26833	s(1,7)= -0.994913	s(1,8)= 0.15811
s(2,1)= 44.9881	s(2,2)= -116.432	s(2,3)= 496.011	s(2,4)= -482.759	s(2,5)= 74.2558	s(2,6)= -19.9803	s(2,7)= 4.65683	s(2,8)= -0.740319
s(3,1)= -114.898	s(3,2)= 496.011	s(3,3)= -12753	s(3,4)= 20411.8	s(3,5)= -10259.3	s(3,6)= 2760.5	s(3,7)= -643.393	s(3,8)= 102.28
s(4,1)= 103.13	s(4,2)= -482.759	s(4,3)= 20411.8	s(4,4)= -38000.5	s(4,5)= 26660.5	s(4,6)= -10811.4	s(4,7)= 2519.83	s(4,8)= -400.575
s(5,1)= -15.863	s(5,2)= 74.2558	s(5,3)= -10259.3	s(5,4)= 26660.5	s(5,5)= -33968.1	s(5,6)= 25945.8	s(5,7)= -10032.1	s(5,8)= 1594.79
s(6,1)= 4.26831	s(6,2)= -19.9803	s(6,3)= 2760.5	s(6,4)= -10811.4	s(6,5)= 25945.8	s(6,6)= -35531.8	s(6,7)= 24220.8	s(6,8)= -6568.28
s(7,1)= -0.99482	s(7,2)= 4.65682	s(7,3)= -643.393	s(7,4)= 2519.83	s(7,5)= -10032.1	s(7,6)= 24220.8	s(7,7)= -25569.4	s(7,8)= 9500.57
s(8,1)= 0.158146	s(8,2)= -0.740291	s(8,3)= 102.28	s(8,4)= -400.575	s(8,5)= 1594.79	s(8,6)= -6568.28	s(8,7)= 9500.57	s(8,8)= -4228.21

R					
Node No	Dist	Fy (N)	Mz (Nm)	Uy (m)	Rz (rad)
1	0	-8504.25	0.003367	-0.0012	0.000694
2	0.197	-1459.45	-0.00402	-0.00106	0.000693
3	0.395	-125225	-0.00785	-0.00092	0.00069
4	0.965	0.028327	-0.00415	-0.00053	0.000634
5	1.475	0.028675	0.006706	-0.00023	0.000524
6	1.967	233748	0.009561	0	0.000385
7	2.137	-0.01188	0.002215	5.99E-05	0.000329
8	2.987	-0.10667	-0.00746	0.000231	9.37E-05
9	3.067	0.104194	-0.00125	0.000238	7.50E-05
10	5.697	0.007725	0.000418	-0.00019	-0.00032
11	6.031	-0.03005	-0.00023	-0.0003	-0.00034
12	6.207	0.025484	-0.00013	-0.00036	-0.00035
13	6.407	-0.11134	-0.04832	-0.00043	-0.00036
14	6.507	0.191097	0.059349	-0.00047	-0.00036
15	6.607	-0.08223	-0.0148	-0.0005	-0.00036
16	6.961	-0.00263	0.000604	-0.00063	-0.00039
17	7.052	38783.5	-0.00097	-0.00067	-0.0004
18	7.192	-0.00974	-0.00017	-0.00073	-0.00041
19	7.332	0.022521	-0.00012	-0.00079	-0.00042
20	7.508	-0.01698	-0.00065	-0.00086	-0.00043
21	8.008	0.005382	-0.00092	-0.00108	-0.00043
22	11.413	0.000223	0.000187	-0.00211	-0.00011
23	12.413	0.000141	0.000526	-0.00216	-3.58E-06
24	12.513	-29204	0.000152	-0.00216	-3.22E-06
25	12.578	0.000967	-0.00878	-0.00216	-3.01E-06
26	12.62	-318.778	0.008422	-0.00216	-2.95E-06
27	12.907	-0.00037	-9.10E-05	-0.00216	-1.07E-06
28	13.161	79100	-1.36E-05	-0.00216	-2.74E-06
29	13.267	-0.00042	0.0009	-0.00216	-2.86E-06
30	13.299	0.000745	-0.00123	-0.00216	-2.90E-06
31	13.373	61054.9	0.000319	-0.00216	-2.98E-06
32	13.662	2.54E-05	-6.60E-06	-0.00216	-5.11E-06
33	13.889	-91400	1.23E-06	-0.00216	4.52E-07
34	14.087	-5.01E-06	-1.58E-06	-0.00216	7.23E-06
35	14.285	85853.4	-1.04E-07	-0.00216	-1.06E-06
36	14.512	2.45E-07	4.79E-08	-0.00216	-9.62E-06
37	14.739	-91400	-1.33E-08	-0.00217	9.75E-07
38	14.937	6.16E-07	-3.39E-07	-0.00216	1.01E-05

39	15.135	89076.4	-3.50E-08	-0.00216	2.21E-06
40	15.362	3.61E-07	5.24E-08	-0.00216	-7.49E-06
41	15.589	-91400	-1.91E-08	-0.00216	9.08E-07
42	15.787	2.01E-07	4.14E-08	-0.00216	7.24E-06
43	15.985	107812	3.69E-08	-0.00216	-4.21E-06
44	16.212	-8.17E-08	2.10E-08	-0.00216	-1.48E-05
45	16.439	-91400	-1.12E-08	-0.00217	2.45E-07
46	16.637	6.04E-08	-1.43E-08	-0.00217	1.84E-05
47	16.835	35092.8	1.58E-09	-0.00216	2.45E-05
48	17.062	-4.93E-09	7.35E-10	-0.00215	2.45E-05

M								
Node No	Coord. X (m)	Fy (N)	Mz (Nm)	Uy (m)	Rz (rad)		Uy - reverse M	M error
1	0	-1.00002	-2.46E-07	-4.04E-05	0.000191		-3.02E-04	-8.94E-01
2	0.026	-0.17	-4.22E-07	-3.54E-05	0.000191		-2.64E-04	-7.95E-01
3	0.053	-14.75	-2.82E-07	-3.03E-05	0.00019		-2.26E-04	-6.96E-01
4	0.129	3.61E-06	2.22E-08	-1.64E-05	0.000167		-1.23E-04	-4.11E-01
5	0.197	-3.45E-06	1.10E-08	-6.35E-06	0.000123		-4.74E-05	-1.83E-01
6	0.263	39.7586	9.11E-09	0	6.41E-05		0.00E+00	0.00E+00
7	0.286	-3.23E-06	2.30E-08	1.19E-06	4.02E-05		8.86E-06	5.11E-02
8	0.4	-2.05E-05	-5.54E-08	1.02E-07	-5.18E-05		7.60E-07	2.30E-01
9	0.411	2.06E-05	-1.67E-07	-5.09E-07	-5.86E-05		-3.80E-06	2.41E-01
10	0.763	8.77E-06	1.92E-07	-4.86E-05	-0.00019		-3.63E-04	1.75E-01
11	0.808	7.92E-06	4.08E-07	-5.77E-05	-0.00021		-4.31E-04	1.32E-01
12	0.832	-2.61E-05	1.07E-07	-6.28E-05	-0.00022		-4.68E-04	1.10E-01
13	0.859	9.55E-06	-9.51E-07	-6.87E-05	-0.00023		-5.13E-04	8.39E-02
14	0.872	3.39E-05	1.42E-06	-7.17E-05	-0.00023		-5.35E-04	7.02E-02
15	0.885	-3.52E-05	-2.10E-07	-7.47E-05	-0.00023		-5.57E-04	5.65E-02
16	0.932	2.93E-06	-3.15E-08	-8.66E-05	-0.00028		-6.46E-04	1.23E-02
17	0.944	25.771	1.01E-08	-9.00E-05	-0.00029		-6.72E-04	1.94E-03
18	0.963	-4.16E-07	-6.22E-09	-9.58E-05	-0.00031		-7.15E-04	-1.19E-02
19	0.982	2.39E-06	-1.38E-08	-0.0001	-0.00033		-7.61E-04	-2.44E-02
20	1.006	-1.21E-06	2.09E-08	-0.00011	-0.00035		-8.23E-04	-3.77E-02
21	1.073	4.81E-08	-3.28E-09	-0.00014	-0.00039		-1.01E-03	-6.72E-02
22	1.529	1.85E-08	1.58E-09	-0.00028	-0.00014		-2.09E-03	-1.53E-02
23	1.663	-2.61E-08	1.25E-08	-0.00029	-6.49E-06		-2.16E-03	4.43E-03
24	1.676	-3.44	-1.84E-08	-0.00029	-5.96E-06		-2.16E-03	4.74E-03
25	1.685	-2.37E-07	-3.38E-08	-0.00029	-5.60E-06		-2.16E-03	4.98E-03
26	1.691	-7.45277	3.45E-08	-0.00029	-5.49E-06		-2.17E-03	5.13E-03
27	1.729	3.30E-08	-3.53E-10	-0.00029	-1.78E-07		-2.17E-03	6.03E-03

28	1.763	9.32	2.29E-09	-0.00029	1.40E-06		-2.17E-03	6.05E-03
29	1.777	-1.08E-06	1.13E-08	-0.00029	1.38E-06		-2.17E-03	5.59E-03
30	1.781	5.24E-07	4.14E-09	-0.00029	1.37E-06		-2.17E-03	5.45E-03
31	1.791	26.3627	-1.19E-08	-0.00029	1.33E-06		-2.17E-03	5.13E-03
32	1.83	3.17E-09	3.23E-10	-0.00029	7.19E-09		-2.17E-03	3.13E-03
33	1.86	-10.77	-7.46E-11	-0.00029	-5.54E-07		-2.17E-03	9.30E-04
34	1.887	1.25E-08	-1.35E-11	-0.00029	1.02E-06		-2.17E-03	3.04E-03
35	1.914	8.71621	1.31E-10	-0.00029	-1.74E-06		-2.17E-03	5.13E-03
36	1.944	-3.14E-09	6.64E-12	-0.00029	-3.91E-06		-2.17E-03	2.97E-03
37	1.974	-10.77	3.05E-11	-0.00029	5.27E-07		-2.17E-03	7.80E-04
38	2.001	-4.82E-09	3.42E-11	-0.00029	4.19E-06		-2.17E-03	2.93E-03
39	2.028	10.7165	-2.65E-13	-0.00029	1.24E-06		-2.17E-03	5.13E-03
40	2.058	-1.49E-09	-6.79E-12	-0.00029	-2.45E-06		-2.17E-03	3.18E-03
41	2.088	-10.77	-1.82E-12	-0.00029	4.05E-07		-2.17E-03	1.16E-03
42	2.115	-8.65E-10	1.09E-11	-0.00029	2.58E-06		-2.17E-03	3.29E-03
43	2.142	12.7782	-6.47E-13	-0.00029	-1.93E-06		-2.17E-03	5.13E-03
44	2.172	4.03E-11	1.11E-12	-0.00029	-5.99E-06		-2.17E-03	1.76E-03
45	2.202	-10.77	1.08E-12	-0.00029	-7.67E-07		-2.17E-03	-1.24E-03
46	2.229	3.30E-11	1.20E-12	-0.00029	5.90E-06		-2.17E-03	1.20E-03
47	2.256	3.99744	6.77E-13	-0.00029	8.12E-06		-2.17E-03	5.13E-03
48	2.286	-1.18E-11	-9.66E-15	-0.00029	8.12E-06		-2.16E-03	8.86E-03

Model								
Node No	Coord. X (m)	Fy (N)	Mz (Nm)	Uy (m)	Rz (rad)		Uy - reverse Model	Model error
1	0	-10.0003	-4.34E-06	-1.71E-04	0.000686		-1.28E-03	8.24E-02
2	0.026	-9.9998	-6.46E-06	-1.48E-04	0.000685		-1.11E-03	4.73E-02
3	0.053	-19.9999	-1.11E-06	-1.25E-04	0.00068		-9.36E-04	1.45E-02
4	0.129	-3.73E-05	-5.24E-07	-7.05E-05	0.000627		-5.26E-04	-7.58E-03
5	0.197	2.61E-05	-9.94E-07	-2.96E-05	0.000525		-2.21E-04	-9.59E-03
6	0.263	76.7907	-6.71E-07	0	0.000381		0.00E+00	0.00E+00
7	0.286	3.51E-05	-1.45E-07	7.93E-06	3.24E-04		5.92E-05	7.03E-04
8	0.4	-0.0004	-2.02E-06	3.03E-05	8.34E-05		2.26E-04	5.20E-03
9	0.411	0.000398	-1.93E-06	3.10E-05	6.49E-05		2.32E-04	5.90E-03
10	0.763	4.86E-06	1.12E-07	-2.48E-05	-0.00032		-1.86E-04	-2.92E-03
11	0.808	-9.60E-05	-9.80E-07	-3.91E-05	-0.00034		-2.92E-04	-6.36E-03
12	0.832	1.36E-04	-4.94E-07	-4.74E-05	-0.00035		-3.54E-04	-4.44E-03
13	0.859	-1.37E-05	9.27E-07	-5.71E-05	-0.00036		-4.27E-04	-2.68E-03
14	0.872	-1.35E-04	-5.19E-07	-6.04E-05	-0.00037		-4.51E-04	-1.38E-02
15	0.885	1.09E-04	-2.49E-07	-6.38E-05	-0.00037		-4.76E-04	-2.48E-02

16	0.932	-3.77E-06	1.98E-07	-8.45E-05	-0.00039		-6.31E-04	-3.37E-03
17	0.944	17.1915	-9.65E-08	-9.00E-05	-0.0004		-6.72E-04	1.94E-03
18	0.963	-3.21E-06	-2.31E-07	-9.84E-05	-0.0004		-7.35E-04	7.74E-03
19	0.982	1.23E-05	7.68E-09	-0.00011	-0.00041		-7.99E-04	1.31E-02
20	1.006	-3.12E-06	-7.13E-08	-0.00012	-0.00041		-8.78E-04	1.78E-02
21	1.073	1.20E-06	-3.16E-08	-0.00015	-0.0004		-1.11E-03	3.31E-02
22	1.529	-9.77E-08	4.33E-10	-0.00028	-8.00E-05		-2.12E-03	1.04E-02
23	1.663	-6.57E-07	-2.36E-08	-0.00029	-9.25E-06		-2.16E-03	4.80E-03
24	1.676	-3.44	2.88E-08	-0.00029	-6.94E-06		-2.16E-03	5.01E-03
25	1.685	-1.74E-06	-9.68E-09	-0.00029	-5.56E-06		-2.17E-03	5.12E-03
26	1.691	3.32607	-3.80E-09	-0.00029	-4.93E-06		-2.17E-03	5.13E-03
27	1.729	1.66E-08	5.67E-10	-0.00029	1.30E-07		-2.17E-03	5.84E-03
28	1.763	9.32	-7.52E-10	-0.00029	1.16E-06		-2.17E-03	5.87E-03
29	1.777	1.17E-07	-1.15E-08	-0.00029	8.68E-07		-2.17E-03	5.50E-03
30	1.781	3.51E-07	1.32E-08	-0.00029	7.42E-07		-2.17E-03	5.37E-03
31	1.791	13.3704	-5.39E-09	-0.00029	4.46E-07		-2.17E-03	5.13E-03
32	1.83	8.20E-08	-5.34E-10	-0.00029	-5.47E-07		-2.17E-03	3.37E-03
33	1.86	-10.77	1.22E-09	-0.00029	4.60E-08		-2.17E-03	9.30E-04
34	1.887	-2.06E-08	9.55E-10	-0.00029	5.61E-07		-2.17E-03	3.11E-03
35	1.914	10.989	8.71E-10	-0.00029	3.11E-08		-2.17E-03	5.13E-03
36	1.944	-8.08E-09	4.16E-11	-0.00029	-5.54E-07		-2.17E-03	2.25E-03
37	1.974	-10.77	1.83E-10	-0.00029	2.73E-08		-2.17E-03	-4.00E-04
38	2.001	5.82E-09	3.47E-10	-0.00029	5.73E-07		-2.17E-03	2.31E-03
39	2.028	10.2329	1.06E-10	-0.00029	1.15E-07		-2.17E-03	5.13E-03
40	2.058	-3.70E-09	-4.85E-11	-0.00029	-4.30E-07		-2.17E-03	2.94E-03
41	2.088	-10.77	-5.07E-12	-0.00029	7.29E-08		-2.17E-03	5.88E-04
42	2.115	-6.33E-09	4.67E-11	-0.00029	4.45E-07		-2.17E-03	3.10E-03
43	2.142	12.8635	-9.73E-12	-0.00029	-2.84E-07		-2.17E-03	5.13E-03
44	2.172	-1.39E-09	-7.46E-12	-0.00029	-9.50E-07		-2.17E-03	8.06E-04
45	2.202	-10.77	-2.75E-12	-0.00029	-1.01E-07		-2.17E-03	-3.03E-03
46	2.229	-3.83E-10	-1.36E-12	-0.00029	9.83E-07		-2.17E-03	-6.72E-05
47	2.256	3.9931	4.92E-12	-0.00029	1.34E-06		-2.17E-03	5.13E-03
48	2.286	-1.16E-10	2.21E-13	-0.00029	1.34E-06		-2.16E-03	1.04E-02