

```

1 ! Created Thu Jul 18 17:49:59 2019
2 # hz S ma R 50
3 ! 1 Port Network Data from SP1.SP block
4 ! freq magS11 angS11
5 !
6         500000000      0.588507287      -14.8280977
7         510000000      0.588118978      -15.2864352
8         520000000      0.587784458      -15.7351005
9         530000000      0.587576047      -16.1683879
10        540000000      0.587243677      -16.6028066
11        550000000      0.587096154      -16.9861379
12        560000000      0.586981108      -17.36434
13        570000000      0.586637038      -17.7235811
14        580000000      0.58631536      -18.1315898
15        590000000      0.58562532      -18.5554094
16        600000000      0.585869475      -18.9700609
17        610000000      0.585969591      -19.3535846
18        620000000      0.58625909      -19.811866
19        630000000      0.586639645      -20.1377616
20        640000000      0.587157667      -20.4851211
21        650000000      0.587624891      -20.7493931
22        660000000      0.587054335      -21.0448596
23        670000000      0.586270902      -21.3437034
24        680000000      0.584412122      -21.7584123
25        690000000      0.582169324      -22.2277777
26        700000000      0.580926432      -22.7534087
27        710000000      0.579208178      -23.3278343
28        720000000      0.579109202      -23.9225092
29        730000000      0.579738166      -24.4317362
30        740000000      0.58141804      -24.9205435
31        750000000      0.582387376      -25.3005443
32        760000000      0.584237176      -25.5695796
33        770000000      0.585084114      -25.7966362
34        780000000      0.585642031      -26.0312824
35        790000000      0.584183561      -26.2470212
36        800000000      0.582188342      -26.6295861
37        810000000      0.579563747      -26.9834904
38        820000000      0.576827043      -27.4846053
39        830000000      0.575050014      -28.0735585
40        840000000      0.574300786      -28.6267817
41        850000000      0.574215283      -29.2743973
42        860000000      0.574884972      -29.721676
43        870000000      0.57692133      -30.1583193
44        880000000      0.578439553      -30.4466054
45        890000000      0.579312585      -30.7218356
46        900000000      0.579056967      -30.9759666
47        910000000      0.577995259      -31.2997498
48        920000000      0.576080232      -31.6559821
49        930000000      0.573766973      -32.1085189
50        940000000      0.572325042      -32.6722413
51        950000000      0.570698441      -33.264813
52        960000000      0.569931597      -33.8450105
53        970000000      0.570127226      -34.3762697
54        980000000      0.571643755      -34.9042876
55        990000000      0.572949288      -35.3007591
56        1e+09      0.573812199      -35.5505368
57        1.01e+09      0.574531722      -35.843678
58        1.02e+09      0.573708776      -36.1106959
59        1.03e+09      0.572024909      -36.3959867
60        1.04e+09      0.569865109      -36.763478
61        1.05e+09      0.567481814      -37.2440044
62        1.06e+09      0.566446618      -37.8034824
63        1.07e+09      0.565587974      -38.4005418
64        1.08e+09      0.565381216      -38.9268648
65        1.09e+09      0.566827115      -39.4445587
66        1.1e+09      0.567670716      -39.8478026
67        1.11e+09      0.568402785      -40.2334514
68        1.12e+09      0.567988346      -40.530057
69        1.13e+09      0.566997325      -40.8173767

```

70	1.14e+09	0.565564512	-41.1510825
71	1.15e+09	0.562763155	-41.5687815
72	1.16e+09	0.56072423	-42.0152649
73	1.17e+09	0.557924779	-42.5693846
74	1.18e+09	0.556664166	-43.176687
75	1.19e+09	0.555998752	-43.814556
76	1.2e+09	0.557091546	-44.3872958
77	1.21e+09	0.558118829	-44.90856
78	1.22e+09	0.559916193	-45.3591714
79	1.23e+09	0.560541312	-45.7264308
80	1.24e+09	0.560627889	-46.0658944
81	1.25e+09	0.55977092	-46.4283122
82	1.26e+09	0.55800921	-46.7592486
83	1.27e+09	0.555739937	-47.2261006
84	1.28e+09	0.553968867	-47.6414871
85	1.29e+09	0.552476993	-48.1506184
86	1.3e+09	0.55138398	-48.7259096
87	1.31e+09	0.551635611	-49.2492577
88	1.32e+09	0.552477669	-49.7617437
89	1.33e+09	0.552892093	-50.2504302
90	1.34e+09	0.554079546	-50.6786896
91	1.35e+09	0.554383246	-51.0313811
92	1.36e+09	0.553752512	-51.4234761
93	1.37e+09	0.552654424	-51.855476
94	1.38e+09	0.550879177	-52.2860893
95	1.39e+09	0.549367523	-52.7080616
96	1.4e+09	0.548403383	-53.2386929
97	1.41e+09	0.547381497	-53.7477121
98	1.42e+09	0.547226235	-54.2314388
99	1.43e+09	0.548109066	-54.6724962
100	1.44e+09	0.548760693	-55.1214205
101	1.45e+09	0.549518694	-55.4778267
102	1.46e+09	0.549075415	-55.8177709
103	1.47e+09	0.548003255	-56.2080263
104	1.48e+09	0.546558339	-56.5815358
105	1.49e+09	0.544445291	-56.9947088
106	1.5e+09	0.542139648	-57.5037364
107	1.51e+09	0.540279852	-57.9927772
108	1.52e+09	0.538992386	-58.5054819
109	1.53e+09	0.538110009	-58.994355
110	1.54e+09	0.538076533	-59.522439
111	1.55e+09	0.538748698	-59.9698541
112	1.56e+09	0.539020199	-60.3495626
113	1.57e+09	0.539088405	-60.7207261
114	1.58e+09	0.538602578	-61.0927472
115	1.59e+09	0.537154	-61.4966321
116	1.6e+09	0.53515372	-61.9145628
117	1.61e+09	0.532974539	-62.4103425
118	1.62e+09	0.530745017	-62.8962612
119	1.63e+09	0.529129943	-63.4284741
120	1.64e+09	0.528697814	-63.9948333
121	1.65e+09	0.528105145	-64.4906627
122	1.66e+09	0.528443924	-64.9232486
123	1.67e+09	0.528394965	-65.2934488
124	1.68e+09	0.528759738	-65.6035836
125	1.69e+09	0.527743453	-65.90508
126	1.7e+09	0.525638153	-66.2464067
127	1.71e+09	0.523365869	-66.6256442
128	1.72e+09	0.520541907	-67.1004075
129	1.73e+09	0.517940681	-67.6191527
130	1.74e+09	0.515455738	-68.2788103
131	1.75e+09	0.51413577	-68.9031268
132	1.76e+09	0.513954685	-69.534491
133	1.77e+09	0.513918546	-70.1004713
134	1.78e+09	0.514416268	-70.6362908
135	1.79e+09	0.515067849	-71.0084032
136	1.8e+09	0.51513412	-71.3418552
137	1.81e+09	0.514130396	-71.7199583
138	1.82e+09	0.513256052	-72.0294177

139	1.83e+09	0.511420457	-72.3959131
140	1.84e+09	0.508634854	-72.8375841
141	1.85e+09	0.506540682	-73.2548981
142	1.86e+09	0.504452893	-73.7653829
143	1.87e+09	0.502635056	-74.2810315
144	1.88e+09	0.501627791	-74.7951564
145	1.89e+09	0.500444373	-75.222687
146	1.9e+09	0.498721863	-75.6553225
147	1.91e+09	0.497248837	-76.0789105
148	1.92e+09	0.49451664	-76.4459471
149	1.93e+09	0.491040155	-76.8346769
150	1.94e+09	0.487273547	-77.3734594
151	1.95e+09	0.483950871	-77.9561486
152	1.96e+09	0.480080718	-78.6308166
153	1.97e+09	0.477908327	-79.372281
154	1.98e+09	0.477008876	-80.1506325
155	1.99e+09	0.475982995	-80.8277399
156	2e+09	0.477057876	-81.2971705
157	2.01e+09	0.477237973	-81.7812268
158	2.02e+09	0.47745479	-82.1632972
159	2.03e+09	0.47643388	-82.4068481
160	2.04e+09	0.474936496	-82.6194159
161	2.05e+09	0.472304155	-82.8097205
162	2.06e+09	0.468795855	-83.0673822
163	2.07e+09	0.464997864	-83.5257989
164	2.08e+09	0.461263819	-84.0369945
165	2.09e+09	0.457875584	-84.6335566
166	2.1e+09	0.454754563	-85.4673113
167	2.11e+09	0.452863505	-86.1906163
168	2.12e+09	0.450705768	-86.8982368
169	2.13e+09	0.448518478	-87.565424
170	2.14e+09	0.446497045	-88.1948477
171	2.15e+09	0.444085308	-88.8016034
172	2.16e+09	0.441800415	-89.2910419
173	2.17e+09	0.438975092	-90.0869233
174	2.18e+09	0.435874958	-90.7316169
175	2.19e+09	0.433146682	-91.3861384
176	2.2e+09	0.431223551	-92.1580539
177	2.21e+09	0.429021797	-92.9564425
178	2.22e+09	0.426615105	-93.688642
179	2.23e+09	0.424846288	-94.2795168
180	2.24e+09	0.422323306	-94.8178765
181	2.25e+09	0.419066796	-95.2176813
182	2.26e+09	0.416641167	-95.597626
183	2.27e+09	0.41372038	-95.9489808
184	2.28e+09	0.410626305	-96.3201039
185	2.29e+09	0.407155544	-96.8925862
186	2.3e+09	0.404112832	-97.4954066
187	2.31e+09	0.401308021	-98.2490363
188	2.32e+09	0.399167947	-99.0815453
189	2.33e+09	0.396567915	-100.007867
190	2.34e+09	0.394403987	-100.793589
191	2.35e+09	0.392497334	-101.689519
192	2.36e+09	0.390548996	-102.34436
193	2.37e+09	0.38828097	-103.002899
194	2.38e+09	0.385811314	-103.608617
195	2.39e+09	0.382557835	-104.404895
196	2.4e+09	0.37934967	-105.081954
197	2.41e+09	0.376666287	-105.845757
198	2.42e+09	0.373964819	-106.8327
199	2.43e+09	0.371275638	-107.788877
200	2.44e+09	0.368321013	-108.740106
201	2.45e+09	0.366414749	-109.589483
202	2.46e+09	0.363453975	-110.457
203	2.47e+09	0.361172333	-111.321817
204	2.48e+09	0.358039276	-111.893258
205	2.49e+09	0.355072926	-112.471902
206	2.5e+09	0.352596291	-113.008985
207	2.51e+09	0.349665838	-113.586662

208	2.52e+09	0.346689845	-114.190892
209	2.53e+09	0.343925441	-115.040902
210	2.54e+09	0.341013739	-116.037933
211	2.55e+09	0.337416795	-117.24718
212	2.56e+09	0.334756154	-118.470609
213	2.57e+09	0.332111871	-119.712247
214	2.58e+09	0.329184261	-120.850031
215	2.59e+09	0.32656611	-121.864903
216	2.6e+09	0.323668153	-122.983183
217	2.61e+09	0.321859933	-123.903962
218	2.62e+09	0.320401748	-124.647583
219	2.63e+09	0.319082266	-125.509291
220	2.64e+09	0.316994017	-126.055654
221	2.65e+09	0.315223579	-126.834029
222	2.66e+09	0.312306512	-127.62196
223	2.67e+09	0.30926551	-128.715508
224	2.68e+09	0.304875446	-129.696749
225	2.69e+09	0.300728276	-130.879836
226	2.7e+09	0.297206282	-132.180744
227	2.71e+09	0.292829469	-133.447594
228	2.72e+09	0.289961297	-134.65141
229	2.73e+09	0.286394715	-135.936839
230	2.74e+09	0.284077314	-137.115423
231	2.75e+09	0.281620184	-138.272575
232	2.76e+09	0.28023178	-139.655588
233	2.77e+09	0.27755	-140.922415
234	2.78e+09	0.275823146	-142.339454
235	2.79e+09	0.273413995	-143.648429
236	2.8e+09	0.270994149	-144.848041
237	2.81e+09	0.268669338	-146.053146
238	2.82e+09	0.266522011	-147.101693
239	2.83e+09	0.265795394	-147.969696
240	2.84e+09	0.264163364	-148.828599
241	2.85e+09	0.262755195	-149.700672
242	2.86e+09	0.262021408	-150.4844
243	2.87e+09	0.260737237	-151.464517
244	2.88e+09	0.259242493	-152.53394
245	2.89e+09	0.256521959	-153.864614
246	2.9e+09	0.253820334	-155.496703
247	2.91e+09	0.251303579	-157.315298
248	2.92e+09	0.249029368	-159.083552
249	2.93e+09	0.247290415	-160.748654
250	2.94e+09	0.246368112	-162.318463
251	2.95e+09	0.245287708	-163.732707
252	2.96e+09	0.246090889	-164.814726
253	2.97e+09	0.245605787	-165.752351
254	2.98e+09	0.246349034	-166.621086
255	2.99e+09	0.245345888	-167.587699
256	3e+09	0.243951531	-168.90481
257	3.01e+09	0.243019197	-170.484421
258	3.02e+09	0.241470227	-172.213189
259	3.03e+09	0.240122546	-173.936562
260	3.04e+09	0.239554087	-176.032793
261	3.05e+09	0.239736454	-177.870923
262	3.06e+09	0.240326582	-179.513972
263	3.07e+09	0.241059213	179.180956
264	3.08e+09	0.242239553	178.02726
265	3.09e+09	0.242608754	176.972403
266	3.1e+09	0.244093868	175.850203
267	3.11e+09	0.242807669	174.762919
268	3.12e+09	0.242400488	173.473365
269	3.13e+09	0.241916735	171.887804
270	3.14e+09	0.240629374	170.262788
271	3.15e+09	0.239738814	168.45608
272	3.16e+09	0.240063038	166.692715
273	3.17e+09	0.241130128	165.242003
274	3.18e+09	0.242093346	163.884263
275	3.19e+09	0.243614126	162.685886
276	3.2e+09	0.244978474	161.597398

277	3.21e+09	0.247003488	160.538702
278	3.22e+09	0.24790919	159.177714
279	3.23e+09	0.249296649	157.843855
280	3.24e+09	0.250205849	156.266616
281	3.25e+09	0.251330889	154.699031
282	3.26e+09	0.252625349	153.077388
283	3.27e+09	0.254733044	151.515502
284	3.28e+09	0.256517408	150.169971
285	3.29e+09	0.258918762	149.035293
286	3.3e+09	0.260595359	148.207281
287	3.31e+09	0.262564715	147.31815
288	3.32e+09	0.263869998	146.473602
289	3.33e+09	0.26509437	145.703433
290	3.34e+09	0.265898881	144.611307
291	3.35e+09	0.267436952	143.522765
292	3.36e+09	0.268345105	142.206583
293	3.37e+09	0.270473624	140.949371
294	3.38e+09	0.272769043	139.565405
295	3.39e+09	0.275356686	138.266444
296	3.4e+09	0.277682335	137.157389
297	3.41e+09	0.28044868	136.072014
298	3.42e+09	0.282388912	135.288848
299	3.43e+09	0.283782397	134.362707
300	3.44e+09	0.285637274	133.422356
301	3.45e+09	0.287323182	132.481078
302	3.46e+09	0.288813576	131.435705
303	3.47e+09	0.290884557	130.358996
304	3.48e+09	0.293113113	129.216256
305	3.49e+09	0.296107649	127.99051
306	3.5e+09	0.29966279	126.950651
307	3.51e+09	0.302521252	125.972702
308	3.52e+09	0.306309651	125.148322
309	3.53e+09	0.30876336	124.314001
310	3.54e+09	0.311129293	123.547473
311	3.55e+09	0.312915316	122.760398
312	3.56e+09	0.313774894	121.852608
313	3.57e+09	0.31635429	120.872454
314	3.58e+09	0.317965345	119.869495
315	3.59e+09	0.320524553	118.843373
316	3.6e+09	0.322588455	117.779658
317	3.61e+09	0.325905749	116.847271
318	3.62e+09	0.329530679	115.992373
319	3.63e+09	0.33193572	115.177153
320	3.64e+09	0.334743437	114.495155
321	3.65e+09	0.336760408	113.832395
322	3.66e+09	0.339095792	113.104584
323	3.67e+09	0.340540561	112.386412
324	3.68e+09	0.341874928	111.727861
325	3.69e+09	0.343263211	110.918912
326	3.7e+09	0.345774879	110.107608
327	3.71e+09	0.347239157	109.328091
328	3.72e+09	0.350826842	108.429492
329	3.73e+09	0.35284594	107.633475
330	3.74e+09	0.35611518	106.81965
331	3.75e+09	0.359183474	105.948387
332	3.76e+09	0.361195763	105.108461
333	3.77e+09	0.363116684	104.278108
334	3.78e+09	0.365413696	103.426259
335	3.79e+09	0.367431911	102.65495
336	3.8e+09	0.369530127	101.930176
337	3.81e+09	0.371750843	101.274715
338	3.82e+09	0.374836584	100.519951
339	3.83e+09	0.378010876	100.029041
340	3.84e+09	0.381040651	99.457632
341	3.85e+09	0.384393938	98.9319578
342	3.86e+09	0.386852067	98.3326542
343	3.87e+09	0.388891877	97.6891204
344	3.88e+09	0.390526281	96.9704946
345	3.89e+09	0.39192575	96.2606298

346	3.9e+09	0.393034206	95.466433
347	3.91e+09	0.393961263	94.6843215
348	3.92e+09	0.394523127	93.9583325
349	3.93e+09	0.396567906	93.1622056
350	3.94e+09	0.398670922	92.4032118
351	3.95e+09	0.4014282	91.7375986
352	3.96e+09	0.404161654	91.1052951
353	3.97e+09	0.406698257	90.4359843
354	3.98e+09	0.409558348	89.69462
355	3.99e+09	0.411986381	88.8677652
356	4e+09	0.414545502	88.0540334
357	4.01e+09	0.417510372	87.2923302
358	4.02e+09	0.419019481	86.653964
359	4.03e+09	0.421280662	86.0706704
360	4.04e+09	0.423830038	85.575791
361	4.05e+09	0.426109246	85.0889737
362	4.06e+09	0.42817734	84.6943407
363	4.07e+09	0.430254447	84.2300315
364	4.08e+09	0.432416783	83.7074584
365	4.09e+09	0.433504746	83.0630909
366	4.1e+09	0.434108746	82.3424313
367	4.11e+09	0.436396918	81.5239565
368	4.12e+09	0.437493722	80.7380055
369	4.13e+09	0.438581038	79.996345
370	4.14e+09	0.439701327	79.3386796
371	4.15e+09	0.441599044	78.8183903
372	4.16e+09	0.444085397	78.2551134
373	4.17e+09	0.446532318	77.840879
374	4.18e+09	0.449388032	77.4593332
375	4.19e+09	0.451985381	77.0152602
376	4.2e+09	0.454484414	76.3218535
377	4.21e+09	0.4564508	75.578266
378	4.22e+09	0.458142354	74.7401782
379	4.23e+09	0.459916965	73.8609081
380	4.24e+09	0.462232562	73.0029641
381	4.25e+09	0.463800186	72.3272761
382	4.26e+09	0.466298957	71.8125544
383	4.27e+09	0.46725701	71.4572557
384	4.28e+09	0.469582992	71.0998401
385	4.29e+09	0.471732402	70.8084876
386	4.3e+09	0.473550002	70.4620691
387	4.31e+09	0.474705481	70.0059185
388	4.32e+09	0.475803694	69.4075264
389	4.33e+09	0.476729994	68.6131917
390	4.34e+09	0.477942907	67.7386187
391	4.35e+09	0.479992244	66.730648
392	4.36e+09	0.482106194	65.7724693
393	4.37e+09	0.484264764	64.8989252
394	4.38e+09	0.487011071	64.2492302
395	4.39e+09	0.490755294	63.6903806
396	4.4e+09	0.493892553	63.2797577
397	4.41e+09	0.496503842	62.8930777
398	4.42e+09	0.499259425	62.5155692
399	4.43e+09	0.501072311	62.1081476
400	4.44e+09	0.50237658	61.5337946
401	4.45e+09	0.504077277	60.9501552
402	4.46e+09	0.505252938	60.3445523
403	4.47e+09	0.50584758	59.7648005
404	4.48e+09	0.507007749	59.1921891
405	4.49e+09	0.508606281	58.6487524
406	4.5e+09	0.50991278	58.2065507
407	4.51e+09	0.511872503	57.7547048
408	4.52e+09	0.514025109	57.2729364
409	4.53e+09	0.51610957	56.7357319
410	4.54e+09	0.518239719	56.1297678
411	4.55e+09	0.520031794	55.4487624
412	4.56e+09	0.522146606	54.6652217
413	4.57e+09	0.523958352	53.9023333
414	4.58e+09	0.526512754	53.0949794

415	4.59e+09	0.529211141	52.4279654
416	4.6e+09	0.531775914	51.9205451
417	4.61e+09	0.534104452	51.4578661
418	4.62e+09	0.536507068	51.173827
419	4.63e+09	0.538924523	50.8768238
420	4.64e+09	0.541025337	50.6342585
421	4.65e+09	0.542909624	50.2620701
422	4.66e+09	0.544303799	49.7403345
423	4.67e+09	0.545727229	49.1940522
424	4.68e+09	0.546808505	48.4482887
425	4.69e+09	0.548190981	47.7311204
426	4.7e+09	0.549700867	47.0165533
427	4.71e+09	0.551560013	46.401985
428	4.72e+09	0.553705134	45.839958
429	4.73e+09	0.556448922	45.3550669
430	4.74e+09	0.558957832	44.905793
431	4.75e+09	0.561400638	44.5091615
432	4.76e+09	0.563505984	44.0488352
433	4.77e+09	0.564846735	43.6181566
434	4.78e+09	0.566319931	43.0368196
435	4.79e+09	0.567914236	42.4297487
436	4.8e+09	0.570269562	41.7985887
437	4.81e+09	0.572000332	41.1715005
438	4.82e+09	0.574494368	40.5674194
439	4.83e+09	0.577314142	40.00411
440	4.84e+09	0.58057358	39.5043972
441	4.85e+09	0.583743837	39.0805568
442	4.86e+09	0.586811251	38.6724946
443	4.87e+09	0.589759201	38.2854576
444	4.88e+09	0.592374813	37.8724474
445	4.89e+09	0.594538303	37.3886411
446	4.9e+09	0.595811959	36.9028879
447	4.91e+09	0.597449025	36.3828947
448	4.92e+09	0.598860027	35.8731502
449	4.93e+09	0.6003074	35.3377725
450	4.94e+09	0.60234566	34.8983907
451	4.95e+09	0.60515871	34.4537543
452	4.96e+09	0.608359389	34.0830406
453	4.97e+09	0.611434308	33.693783
454	4.98e+09	0.614422408	33.2931038
455	4.99e+09	0.617135122	32.8698517
456	5e+09	0.619547195	32.4303581
457	5.01e+09	0.621450912	31.9433991
458	5.02e+09	0.62340486	31.4229067
459	5.03e+09	0.625107759	30.8999549
460	5.04e+09	0.626891816	30.3882308
461	5.05e+09	0.629052816	29.9202616
462	5.06e+09	0.631817911	29.4730303
463	5.07e+09	0.634810571	29.0694712
464	5.08e+09	0.63810311	28.683268
465	5.09e+09	0.641834712	28.3180684
466	5.1e+09	0.644712241	27.9778701
467	5.11e+09	0.6473726	27.6141603
468	5.12e+09	0.649287327	27.2188525
469	5.13e+09	0.650720654	26.7633185
470	5.14e+09	0.652300151	26.3101904
471	5.15e+09	0.654044434	25.8499352
472	5.16e+09	0.656605031	25.4005728
473	5.17e+09	0.659103938	24.9584588
474	5.18e+09	0.66248563	24.5787548
475	5.19e+09	0.666171635	24.2021257
476	5.2e+09	0.669540525	23.8827563
477	5.21e+09	0.672867933	23.5990374
478	5.22e+09	0.6758413	23.2702076
479	5.23e+09	0.677995571	22.9670478
480	5.24e+09	0.679471875	22.6111117
481	5.25e+09	0.681043715	22.227896
482	5.26e+09	0.681905158	21.8017826
483	5.27e+09	0.683430788	21.3750407

484	5.28e+09	0.685928027	20.9484916
485	5.29e+09	0.688813455	20.5801539
486	5.3e+09	0.692193658	20.2667703
487	5.31e+09	0.695745147	19.9502446
488	5.32e+09	0.6992795	19.7154224
489	5.33e+09	0.702257573	19.4889827
490	5.34e+09	0.704588297	19.2471445
491	5.35e+09	0.706265066	18.961575
492	5.36e+09	0.707326039	18.5868883
493	5.37e+09	0.708714499	18.2237526
494	5.38e+09	0.710203058	17.828218
495	5.39e+09	0.712074947	17.4108151
496	5.4e+09	0.714935339	17.0499972
497	5.41e+09	0.718193326	16.7220924
498	5.42e+09	0.722263076	16.4828458
499	5.43e+09	0.726038515	16.2394058
500	5.44e+09	0.729250976	16.098139
501	5.45e+09	0.731786006	15.9585174
502	5.46e+09	0.733288587	15.7963373
503	5.47e+09	0.734294411	15.588273
504	5.48e+09	0.735050475	15.2831698
505	5.49e+09	0.73568479	14.960838
506	5.5e+09	0.736630632	14.5933982
507	5.51e+09	0.738891309	14.2312308
508	5.52e+09	0.741231238	13.9028202
509	5.53e+09	0.744240966	13.6187883
510	5.54e+09	0.747526949	13.4388607
511	5.55e+09	0.750650678	13.3007887
512	5.56e+09	0.753229209	13.1775568
513	5.57e+09	0.754382445	13.0726332
514	5.58e+09	0.75546129	12.8884437
515	5.59e+09	0.75581222	12.6649493
516	5.6e+09	0.75620048	12.3801902
517	5.61e+09	0.756986419	12.0333009
518	5.62e+09	0.758326276	11.6869693
519	5.63e+09	0.76074045	11.3563218
520	5.64e+09	0.763848641	11.1423894
521	5.65e+09	0.767205085	10.93028
522	5.66e+09	0.770397133	10.8358876
523	5.67e+09	0.772932168	10.7739645
524	5.68e+09	0.774963131	10.7292964
525	5.69e+09	0.775672298	10.6551355
526	5.7e+09	0.776123714	10.5423335
527	5.71e+09	0.776278201	10.3399065
528	5.72e+09	0.776309488	10.0885255
529	5.73e+09	0.777223405	9.7665874
530	5.74e+09	0.778970285	9.50924318
531	5.75e+09	0.780954275	9.29274399
532	5.76e+09	0.783744145	9.14506692
533	5.77e+09	0.786477957	9.07142739
534	5.78e+09	0.789182843	9.05595729
535	5.79e+09	0.791487966	9.06983106
536	5.8e+09	0.792700955	9.04323459
537	5.81e+09	0.793009277	8.96065294
538	5.82e+09	0.793334901	8.8098597
539	5.83e+09	0.79349888	8.5943184
540	5.84e+09	0.794230448	8.29224286
541	5.85e+09	0.796202324	8.04488801
542	5.86e+09	0.798410648	7.79864198
543	5.87e+09	0.801367444	7.62427694
544	5.88e+09	0.805224028	7.504424
545	5.89e+09	0.807986787	7.50351895
546	5.9e+09	0.810476558	7.52113147
547	5.91e+09	0.811930688	7.5215441
548	5.92e+09	0.813319304	7.47600496
549	5.93e+09	0.813443679	7.3483528
550	5.94e+09	0.814271153	7.16763736
551	5.95e+09	0.814938157	6.8768178
552	5.96e+09	0.816660865	6.60914016

553	5.97e+09	0.818626787	6.34052532
554	5.98e+09	0.821309127	6.14606052
555	5.99e+09	0.824451268	6.01706281
556	6e+09	0.826920334	5.9775945
557	6.01e+09	0.82952157	5.96429049
558	6.02e+09	0.831042199	5.97222381
559	6.03e+09	0.831285416	5.90773213
560	6.04e+09	0.83147641	5.74774569
561	6.05e+09	0.8315979	5.5140124
562	6.06e+09	0.831838532	5.1833174
563	6.07e+09	0.832840827	4.84985255
564	6.08e+09	0.834580873	4.51529245
565	6.09e+09	0.837450159	4.25182762
566	6.1e+09	0.84013833	4.08788466
567	6.11e+09	0.842901264	4.00705186
568	6.12e+09	0.845604498	4.03745967
569	6.13e+09	0.846910465	4.08383334
570	6.14e+09	0.847665119	4.12337855
571	6.15e+09	0.847003527	4.12040926
572	6.16e+09	0.846211076	4.02197961
573	6.17e+09	0.845287245	3.84027429
574	6.18e+09	0.84480315	3.57191361
575	6.19e+09	0.844732573	3.28672221
576	6.2e+09	0.84593514	3.02872848
577	6.21e+09	0.847402191	2.79893735
578	6.22e+09	0.84887758	2.62992416
579	6.23e+09	0.850787533	2.55214825
580	6.24e+09	0.852279835	2.51825973
581	6.25e+09	0.852689125	2.45881958
582	6.26e+09	0.852671912	2.33985508
583	6.27e+09	0.852056966	2.17931884
584	6.28e+09	0.851762923	1.97043442
585	6.29e+09	0.851694795	1.69897636
586	6.3e+09	0.852466738	1.42791793
587	6.31e+09	0.853700313	1.18926217
588	6.32e+09	0.855645027	1.04216072
589	6.33e+09	0.857976142	0.935224505
590	6.34e+09	0.858642251	0.940148974
591	6.35e+09	0.85966225	0.96693825
592	6.36e+09	0.859361145	0.973488552
593	6.37e+09	0.858745656	0.928191694
594	6.38e+09	0.857643565	0.804280665
595	6.39e+09	0.856320576	0.559027429
596	6.4e+09	0.855810828	0.244192821
597	6.41e+09	0.855828851	-0.107551692
598	6.42e+09	0.856495948	-0.424171376
599	6.43e+09	0.857788235	-0.702051038
600	6.44e+09	0.859541702	-0.857345608
601	6.45e+09	0.861028439	-0.894901884
602	6.46e+09	0.862870304	-0.894299532
603	6.47e+09	0.863315528	-0.870349697
604	6.48e+09	0.863407907	-0.889292454
605	6.49e+09	0.863053607	-0.963793608
606	6.5e+09	0.862058049	-1.13574754
607			