```
startPoint = [-1 1 1 -1];
options = optimoptions('fmincon','Display','iter','Algorithm','interior-
point');
startTime = tic;
xsol = fmincon(@expensive_objfun,startPoint,[],[],[],[],[],
[],@expensive_confun,options);
time_fmincon_sequential = toc(startTime);
fprintf('Serial FMINCON optimization takes %g seconds.
\n',time_fmincon_sequential);

%659.831 seconds. for one of the runs
```

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
0	5	1.839397e+00	8.000e+00	3.311e+00	
1	11	1.757906e+00	8.000e+00	3.196e+00	2.253e-02
2	16	1.740626e+00	8.000e+00	3.180e+00	6.002e-03
3	21	1.740273e+00	8.000e+00	3.180e+00	1.576e-04
4	26	-9.515583e-02	8.000e+00	8.739e-01	1.520e+00
5	31	-2.065262e+00	8.000e+00	1.378e+00	1.307e+00
6	36	-4.178410e+00	8.000e+00	3.478e+00	1.933e+01
7	41	-8.473103e+00	8.000e+00	6.681e+00	3.468e+00
8	46	-2.533383e+01	8.000e+00	1.451e+01	5.365e+00
9	57	-2.626392e+01	8.000e+00	1.482e+01	5.634e-02
10	63	-2.721593e+01	8.000e+00	1.512e+01	5.630e-02
11	69	-2.818955e+01	8.000e+00	1.541e+01	5.627e-02
12	75	-2.918419e+01	8.000e+00	1.568e+01	5.624e-02
13	81	-3.019915e+01	8.000e+00	1.594e+01	5.620e-02
14	87	-3.123361e+01	8.000e+00	1.617e+01	5.617e-02
15	93	-3.228660e+01	8.000e+00	1.638e+01	5.614e-02
16	99	-3.335703e+01	8.000e+00	1.657e+01	5.610e-02
17	105	-3.444358e+01	8.000e+00	1.673e+01	5.606e-02
18	111	-3.554392e+01	8.000e+00	1.685e+01	5.601e-02
19	119	-3.651822e+01	8.000e+00	1.693e+01	4.900e-02
20	125	-3.750153e+01	8.000e+00	1.699e+01	4.897e-02
21	131	-3.849238e+01	8.000e+00	1.701e+01	4.895e-02
22	137	-3.948847e+01	8.000e+00	1.700e+01	4.891e-02
23	145	-4.036500e+01	8.000e+00	1.696e+01	4.279e-02
24	152	-4.190596e+01	8.000e+00	1.683e+01	7.489e-02
25	157	-4.344920e+01	8.000e+00	1.661e+01	7.484e-02
26	163	-4.498893e+01	8.000e+00	1.628e+01	7.481e-02
27	169	-4.651859e+01	8.000e+00	1.585e+01	7.481e-02
28	175	-4.803142e+01	8.000e+00	1.531e+01	7.482e-02
29	181	-4.952069e+01	8.000e+00	1.462e+01	7.485e-02
30	187	-5.097996e+01	8.000e+00	1.380e+01	7.492e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
31	193	-5.240341e+01	8.000e+00	1.285e+01	7.502e-02
32	199	-5.378630e+01	8.000e+00	1.176e+01	7.517e-02
33	205	-5.512546e+01	8.000e+00	1.086e+01	7.536e-02
34	211	-5.641975e+01	8.000e+00	1.094e+01	7.559e-02

35	217	-5.767045e+01	8.000e+00	1.112e+01	7.586e-02
36	223	-5.888132e+01	8.000e+00	1.129e+01	7.615e-02
37	229	-6.005835e+01	8.000e+00	1.144e+01	7.643e-02
38	235	-6.120891e+01	8.000e+00	1.157e+01	7.667e-02
39	241	-6.234075e+01	8.000e+00	1.168e+01	7.684e-02
40	247	-6.346100e+01	8.000e+00	1.178e+01	7.695e-02
41	253	-6.457553e+01	8.000e+00	1.190e+01	7.700e-02
42	259	-6.568871e+01	8.000e+00	1.202e+01	7.700e-02
43	265	-6.680353e+01	8.000e+00	1.212e+01	7.697e-02
44	270	-6.904428e+01	8.000e+00	1.231e+01	1.538e-01
45	275	-7.130779e+01	8.000e+00	1.247e+01	1.536e-01
46	280	-7.591153e+01	8.000e+00	1.276e+01	3.069e-01
47	285	-8.062221e+01	8.000e+00	1.302e+01	3.066e-01
48	293	-8.483071e+01	8.000e+00	1.325e+01	2.683e-01
49	300	-9.462660e+01	8.000e+00	1.376e+01	6.059e-01
50	307	-9.851154e+01	8.000e+00	1.401e+01	2.354e-01
51	312	-1.088452e+02	8.000e+00	1.437e+01	6.037e-01
52	322	-1.106458e+02	8.000e+00	1.449e+01	1.031e-01
53	327	-1.142737e+02	8.000e+00	1.469e+01	2.059e-01
54	332	-1.227964e+02	8.000e+00	1.510e+01	4.731e-01
55	337	-2.220378e+02	8.000e+00	1.893e+01	4.767e+00
56	344	-4.540781e+02	8.000e+00	6.992e+01	8.387e+00
57	349	-4.348490e+03	8.000e+00	8.413e+01	5.884e+01
58	367	-4.352161e+03	8.000e+00	8.391e+01	2.772e-02
59	373	-4.355324e+03	8.000e+00	8.380e+01	2.958e-02
60	378	-4.361492e+03	8.000e+00	8.386e+01	6.042e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
61	383	-4.373829e+03	8.000e+00	8.386e+01	1.207e-01
62	392	-4.379236e+03	8.000e+00	8.400e+01	5.282e-02
63	397	-4.390070e+03	8.000e+00	8.402e+01	1.057e-01
64	405	-4.399523e+03	8.000e+00	8.420e+01	9.254e-02
65	410	-4.417901e+03	8.000e+00	8.403e+01	1.842e-01
66	420	-4.422135e+03	8.000e+00	8.431e+01	3.906e-02
67	425	-4.426311e+03	8.000e+00	8.436e+01	4.051e-02
68	430	-4.455592e+03	8.000e+00	8.459e+01	2.835e-01
69	437	-4.524071e+03	8.000e+00	8.525e+01	6.608e-01
70	442	-4.593253e+03	8.000e+00	8.568e+01	6.605e-01
71	451	-4.615969e+03	8.000e+00	8.597e+01	2.171e-01
72	456	-4.636688e+03	8.000e+00	8.646e+01	2.149e-01
73	467	-4.639765e+03	8.000e+00	8.628e+01	2.173e-02
74	473	-4.642413e+03	8.000e+00	8.616e+01	2.293e-02
75	478	-4.647395e+03	8.000e+00	8.615e+01	4.720e-02
76	483	-4.657397e+03	8.000e+00	8.616e+01	9.485e-02
77	491	-4.666136e+03	8.000e+00	8.633e+01	8.307e-02
78	496	-4.683323e+03	8.000e+00	8.622e+01	1.655e-01
79	506	-4.687211e+03	8.000e+00	8.643e+01	3.556e-02
80	511	-4.694916e+03	8.000e+00	8.652e+01	7.273e-02
81	516	-4.767389e+03	8.000e+00	8.680e+01	6.868e-01
82	521	-5.417756e+03	8.000e+00	1.059e+02	5.917e+00
83	526	-1.097152e+04	8.000e+00	1.159e+03	4.156e+01
84	531	-7.359864e+04	8.000e+00	3.312e+04	2.910e+02
85	536	-7.691909e+04	8.000e+00	3.298e+04	8.439e-02

86	541	-9.293339e+04	8.000e+00	2.798e+04	4.145e-01
87	558	-1.014769e+05	8.000e+00	1.953e+04	2.622e-01
88	566	-1.062620e+05	8.000e+00	6.143e+03	2.205e-01
89	573	-1.073183e+05	8.000e+00	2.969e+03	1.051e-01
90	580	-1.074628e+05	8.000e+00	3.741e+02	5.125e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
91	587	-1.074779e+05	8.000e+00	4.700e+02	3.231e-02
92	592	-1.075068e+05	8.000e+00	5.414e+02	6.433e-02
93	602	-1.075149e+05	8.000e+00	3.741e+02	1.224e-02
94	607	-1.075292e+05	8.000e+00	3.741e+02	2.853e-02
95	615	-1.075415e+05	8.000e+00	3.743e+02	2.488e-02
96	620	-1.075602e+05	8.000e+00	6.380e+02	4.890e-02
97	629	-1.075713e+05	8.000e+00	3.977e+02	1.871e-02
98	634	-1.075801e+05	8.000e+00	3.747e+02	2.060e-02
99	642	-1.075879e+05	8.000e+00	4.672e+02	1.754e-02
100	647	-1.075959e+05	8.000e+00	3.746e+02	1.774e-02
101	655	-1.076033e+05	8.000e+00	3.745e+02	1.565e-02
102	660	-1.076150e+05	8.000e+00	5.383e+02	3.201e-02
103	669	-1.076232e+05	8.000e+00	3.744e+02	1.256e-02
104	674	-1.076377e+05	8.000e+00	3.742e+02	2.922e-02
105	682	-1.076496e+05	8.000e+00	3.912e+02	2.527e-02
106	687	-1.076688e+05	8.000e+00	6.520e+02	4.988e-02
107	696	-1.076806e+05	8.000e+00	3.870e+02	1.932e-02
108	701	-1.076896e+05	8.000e+00	3.749e+02	2.119e-02
109	709	-1.076975e+05	8.000e+00	4.962e+02	1.793e-02
110	714	-1.077055e+05	8.000e+00	3.749e+02	1.808e-02
111	722	-1.077130e+05	8.000e+00	3.747e+02	1.593e-02
112	727	-1.077241e+05	8.000e+00	5.889e+02	3.264e-02
113	736	-1.077329e+05	8.000e+00	3.745e+02	1.275e-02
114	741	-1.077480e+05	8.000e+00	3.745e+02	3.003e-02
115	749	-1.077609e+05	8.000e+00	3.747e+02	2.617e-02
116	754	-1.077785e+05	8.000e+00	7.524e+02	5.119e-02
117	763	-1.077918e+05	8.000e+00	3.748e+02	1.944e-02
118	768	-1.078013e+05	8.000e+00	3.751e+02	2.199e-02
119	776	-1.078093e+05	8.000e+00	5.199e+02	1.849e-02
120	781	-1.078173e+05	8.000e+00	3.751e+02	1.845e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
121	789	-1.078249e+05	8.000e+00	3.875e+02	1.623e-02
122	794	-1.078355e+05	8.000e+00	6.398e+02	3.328e-02
123	803	-1.078450e+05	8.000e+00	3.747e+02	1.295e-02
124	808	-1.078605e+05	8.000e+00	3.748e+02	3.083e-02
125	814	-1.079148e+05	8.000e+00	3.750e+02	1.079e-01
126	819	-1.080060e+05	8.000e+00	1.137e+03	2.151e-01
127	830	-1.080271e+05	8.000e+00	3.751e+02	1.890e-02
128	835	-1.080501e+05	8.000e+00	3.807e+02	4.710e-02
129	840	-1.080916e+05	8.000e+00	6.702e+02	9.363e-02
130	850	-1.081023e+05	8.000e+00	3.754e+02	1.727e-02
131	855	-1.081141e+05	8.000e+00	7.364e+02	3.935e-02
132	864	-1.081255e+05	8.000e+00	3.753e+02	1.496e-02
133	869	-1.081434e+05	8.000e+00	3.752e+02	3.603e-02

134	878	-1.081508e+05	8.000e+00	3.755e+02	1.534e-02
135	883	-1.081643e+05	8.000e+00	3.759e+02	3.087e-02
136	892	-1.081711e+05	8.000e+00	3.755e+02	1.242e-02
137	897	-1.081841e+05	8.000e+00	3.757e+02	2.733e-02
138	906	-1.081900e+05	8.000e+00	3.755e+02	1.147e-02
139	911	-1.082018e+05	8.000e+00	3.753e+02	2.403e-02
140	919	-1.082115e+05	8.000e+00	3.756e+02	2.067e-02
141	924	-1.082251e+05	8.000e+00	6.895e+02	4.061e-02
142	933	-1.082359e+05	8.000e+00	3.756e+02	1.545e-02
143	938	-1.082525e+05	8.000e+00	3.760e+02	3.655e-02
144	947	-1.082598e+05	8.000e+00	3.757e+02	1.465e-02
145	952	-1.082719e+05	8.000e+00	4.891e+02	3.119e-02
146	961	-1.082795e+05	8.000e+00	3.756e+02	1.232e-02
147	966	-1.082935e+05	8.000e+00	3.755e+02	2.826e-02
148	974	-1.083046e+05	8.000e+00	4.705e+02	2.426e-02
149	979	-1.083253e+05	8.000e+00	5.458e+02	4.845e-02
150	989	-1.083323e+05	8.000e+00	3.758e+02	9.306e-03

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
151	996	-1.083414e+05	8.000e+00	3.758e+02	1.873e-02
152	1001	-1.083562e+05	8.000e+00	5.109e+02	3.701e-02
153	1010	-1.083645e+05	8.000e+00	3.759e+02	1.437e-02
154	1015	-1.083784e+05	8.000e+00	4.098e+02	3.246e-02
155	1024	-1.083856e+05	8.000e+00	3.759e+02	1.293e-02
156	1029	-1.083989e+05	8.000e+00	3.762e+02	2.866e-02
157	1038	-1.084051e+05	8.000e+00	3.759e+02	1.186e-02
158	1043	-1.084173e+05	8.000e+00	3.757e+02	2.522e-02
159	1051	-1.084269e+05	8.000e+00	4.863e+02	2.147e-02
160	1056	-1.084353e+05	8.000e+00	3.764e+02	2.059e-02
161	1064	-1.084432e+05	8.000e+00	4.974e+02	1.760e-02
162	1069	-1.084511e+05	8.000e+00	3.763e+02	1.797e-02
163	1077	-1.084586e+05	8.000e+00	3.761e+02	1.585e-02
164	1082	-1.084698e+05	8.000e+00	5.861e+02	3.246e-02
165	1091	-1.084786e+05	8.000e+00	3.760e+02	1.268e-02
166	1096	-1.084936e+05	8.000e+00	3.759e+02	2.984e-02
167	1104	-1.085064e+05	8.000e+00	3.761e+02	2.599e-02
168	1109	-1.085230e+05	8.000e+00	7.935e+02	5.072e-02
169	1118	-1.085365e+05	8.000e+00	3.762e+02	1.907e-02
170	1123	-1.085498e+05	8.000e+00	7.829e+02	4.389e-02
171	1132	-1.085623e+05	8.000e+00	3.762e+02	1.648e-02
172	1137	-1.085801e+05	8.000e+00	3.819e+02	3.950e-02
173	1146	-1.085877e+05	8.000e+00	3.783e+02	1.569e-02
174	1151	-1.085986e+05	8.000e+00	6.285e+02	3.316e-02
175	1160	-1.086079e+05	8.000e+00	3.762e+02	1.291e-02
176	1165	-1.086234e+05	8.000e+00	3.762e+02	3.063e-02
177	1172	-1.086500e+05	8.000e+00	3.765e+02	5.356e-02
178	1177	-1.086961e+05	8.000e+00	7.701e+02	1.064e-01
179	1187	-1.087100e+05	8.000e+00	3.766e+02	1.994e-02
180	1192	-1.087198e+05	8.000e+00	3.769e+02	2.247e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
181	1200	-1.087279e+05	8.000e+00	5.500e+02	1.881e-02

182	1205	-1.087359e+05	8.000e+00	3.769e+02	1.869e-02
183	1213	-1.087435e+05	8.000e+00	4.133e+02	1.644e-02
184	1218	-1.087549e+05	8.000e+00	6.263e+02	3.404e-02
185	1227	-1.087643e+05	8.000e+00	3.765e+02	1.324e-02
186	1232	-1.087801e+05	8.000e+00	3.764e+02	3.139e-02
187	1240	-1.087932e+05	8.000e+00	3.768e+02	2.723e-02
188	1245	-1.088137e+05	8.000e+00	6.932e+02	5.365e-02
189	1255	-1.088226e+05	8.000e+00	3.769e+02	1.003e-02
190	1262	-1.088319e+05	8.000e+00	4.317e+02	2.033e-02
191	1267	-1.088475e+05	8.000e+00	5.983e+02	4.057e-02
192	1276	-1.088570e+05	8.000e+00	3.768e+02	1.561e-02
193	1281	-1.088708e+05	8.000e+00	5.369e+02	3.566e-02
194	1290	-1.088793e+05	8.000e+00	3.768e+02	1.384e-02
195	1295	-1.088939e+05	8.000e+00	3.772e+02	3.176e-02
196	1304	-1.089006e+05	8.000e+00	3.769e+02	1.296e-02
197	1309	-1.089133e+05	8.000e+00	3.772e+02	2.766e-02
198	1318	-1.089194e+05	8.000e+00	3.769e+02	1.141e-02
199	1323	-1.089315e+05	8.000e+00	3.767e+02	2.451e-02
200	1331	-1.089413e+05	8.000e+00	3.979e+02	2.105e-02
201	1336	-1.089564e+05	8.000e+00	6.492e+02	4.159e-02
202	1345	-1.089666e+05	8.000e+00	3.770e+02	1.587e-02
203	1350	-1.089812e+05	8.000e+00	5.203e+02	3.674e-02
204	1359	-1.089896e+05	8.000e+00	3.770e+02	1.425e-02
205	1364	-1.090037e+05	8.000e+00	3.934e+02	3.233e-02
206	1373	-1.090107e+05	8.000e+00	3.771e+02	1.292e-02
207	1378	-1.090239e+05	8.000e+00	3.774e+02	2.845e-02
208	1387	-1.090301e+05	8.000e+00	3.771e+02	1.174e-02
209	1392	-1.090423e+05	8.000e+00	3.769e+02	2.508e-02
210	1400	-1.090519e+05	8.000e+00	4.738e+02	2.139e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
211	1405	-1.090699e+05	8.000e+00	5.461e+02	4.295e-02
212	1414	-1.090788e+05	8.000e+00	3.992e+02	1.661e-02
213	1419	-1.090913e+05	8.000e+00	6.536e+02	3.697e-02
214	1428	-1.091013e+05	8.000e+00	3.772e+02	1.423e-02
215	1433	-1.091178e+05	8.000e+00	3.770e+02	3.372e-02
216	1442	-1.091247e+05	8.000e+00	3.773e+02	1.415e-02
217	1447	-1.091375e+05	8.000e+00	3.777e+02	2.897e-02
218	1456	-1.091440e+05	8.000e+00	3.773e+02	1.176e-02
219	1461	-1.091566e+05	8.000e+00	3.771e+02	2.576e-02
220	1469	-1.091665e+05	8.000e+00	4.836e+02	2.198e-02
221	1474	-1.091853e+05	8.000e+00	5.356e+02	4.415e-02
222	1483	-1.091941e+05	8.000e+00	4.438e+02	1.708e-02
223	1488	-1.092024e+05	8.000e+00	3.777e+02	1.856e-02
224	1496	-1.092099e+05	8.000e+00	3.809e+02	1.615e-02
225	1501	-1.092207e+05	8.000e+00	6.293e+02	3.295e-02
226	1510	-1.092300e+05	8.000e+00	3.774e+02	1.283e-02
227	1515	-1.092455e+05	8.000e+00	3.774e+02	3.045e-02
228	1522	-1.092721e+05	8.000e+00	3.776e+02	5.325e-02
229	1527	-1.093156e+05	8.000e+00	8.724e+02	1.057e-01
230	1537	-1.093303e+05	8.000e+00	3.777e+02	1.914e-02
231	1542	-1.093451e+05	8.000e+00	7.468e+02	4.504e-02
232	1551	-1.093570e+05	8.000e+00	3.778e+02	1.688e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
233	1556	-1.093724e+05	8.000e+00	5.695e+02	3.969e-02
234	1565	-1.093815e+05	8.000e+00	3.778e+02	1.522e-02
235	1570	-1.093952e+05	8.000e+00	5.093e+02	3.460e-02
236	1579	-1.094033e+05	8.000e+00	3.778e+02	1.350e-02
237	1584	-1.094176e+05	8.000e+00	3.782e+02	3.079e-02
238	1593	-1.094242e+05	8.000e+00	3.779e+02	1.263e-02
239	1598	-1.094368e+05	8.000e+00	3.782e+02	2.688e-02
240	1607	-1.094427e+05	8.000e+00	3.778e+02	1.119e-02
241	1612	-1.094545e+05	8.000e+00	3.777e+02	2.376e-02
242	1620	-1.094642e+05	8.000e+00	3.780e+02	2.049e-02
243	1625	-1.094764e+05	8.000e+00	7.433e+02	3.996e-02
244	1634	-1.094880e+05	8.000e+00	3.779e+02	1.516e-02
245	1639	-1.095058e+05	8.000e+00	3.777e+02	3.644e-02
246	1648	-1.095132e+05	8.000e+00	3.781e+02	1.526e-02
247	1653	-1.095258e+05	8.000e+00	4.607e+02	3.096e-02
248	1662	-1.095331e+05	8.000e+00	3.780e+02	1.228e-02
249	1667	-1.095468e+05	8.000e+00	3.778e+02	2.785e-02
250	1675	-1.095573e+05	8.000e+00	5.495e+02	2.372e-02
251	1680	-1.095656e+05	8.000e+00	4.512e+02	2.236e-02
252	1689	-1.095718e+05	8.000e+00	3.781e+02	9.424e-03
253	1695	-1.095904e+05	8.000e+00	3.782e+02	3.747e-02
254	1700	-1.096186e+05	8.000e+00	8.277e+02	7.394e-02
255	1710	-1.096311e+05	8.000e+00	3.783e+02	1.347e-02
256	1715	-1.096465e+05	8.000e+00	4.747e+02	3.256e-02
257	1720	-1.096760e+05	8.000e+00	5.466e+02	6.483e-02
258	1730	-1.096841e+05	8.000e+00	3.783e+02	1.233e-02
259	1735	-1.096986e+05	8.000e+00	3.782e+02	2.872e-02
260	1743	-1.097107e+05	8.000e+00	3.785e+02	2.493e-02
261	1748	-1.097265e+05	8.000e+00	7.960e+02	4.864e-02
262	1757	-1.097393e+05	8.000e+00	3.785e+02	1.811e-02
263	1762	-1.097525e+05	8.000e+00	7.541e+02	4.228e-02
264	1771	-1.097644e+05	8.000e+00	3.785e+02	1.593e-02
265	1776	-1.097819e+05	8.000e+00	3.789e+02	3.806e-02
266	1785	-1.097893e+05	8.000e+00	3.786e+02	1.523e-02
267	1790	-1.098007e+05	8.000e+00	5.773e+02	3.212e-02
268	1799	-1.098093e+05	8.000e+00	3.785e+02	1.256e-02
269	1804	-1.098242e+05	8.000e+00	3.784e+02	2.947e-02
270	1812	-1.098367e+05	8.000e+00	3.787e+02	2.562e-02
271	1817	-1.098520e+05	8.000e+00	8.423e+02	4.986e-02
272	1826	-1.098657e+05	8.000e+00	3.787e+02	1.850e-02
273	1831	-1.098798e+05	8.000e+00	7.468e+02	4.353e-02
274	1840	-1.098916e+05	8.000e+00	3.787e+02	1.636e-02
275	1845	-1.099081e+05	8.000e+00	4.718e+02	3.875e-02
276	1854	-1.099162e+05	8.000e+00	3.789e+02	1.510e-02
277	1859	-1.099283e+05	8.000e+00	5.630e+02	3.315e-02
278	1868	-1.099368e+05	8.000e+00	3.788e+02	1.292e-02
279	1873	-1.099518e+05	8.000e+00	3.786e+02	3.014e-02
280	1881	-1.099633e+05	8.000e+00	5.681e+02	2.577e-02

281	1886	-1.099727e+05	8.000e+00	4.590e+02	2.439e-02
282	1895	-1.099793e+05	8.000e+00	3.788e+02	1.015e-02
283	1900	-1.099911e+05	8.000e+00	3.789e+02	2.317e-02
284	1905	-1.100658e+05	8.000e+00	7.669e+02	1.619e-01
285	1916	-1.100776e+05	8.000e+00	3.790e+02	1.465e-02
286	1921	-1.100956e+05	8.000e+00	3.789e+02	3.547e-02
287	1929	-1.101107e+05	8.000e+00	3.792e+02	3.086e-02
288	1934	-1.101344e+05	8.000e+00	7.326e+02	6.085e-02
289	1944	-1.101444e+05	8.000e+00	3.793e+02	1.127e-02
290	1949	-1.101565e+05	8.000e+00	5.269e+02	2.660e-02
291	1954	-1.101657e+05	8.000e+00	4.954e+02	2.507e-02
292	1963	-1.101727e+05	8.000e+00	3.792e+02	1.032e-02
293	1968	-1.101847e+05	8.000e+00	3.792e+02	2.375e-02
294	1973	-1.102491e+05	8.000e+00	1.227e+03	1.655e-01
295	1984	-1.102698e+05	8.000e+00	3.799e+02	1.453e-02
296	1992	-1.102771e+05	8.000e+00	3.795e+02	1.438e-02
297	1997	-1.102893e+05	8.000e+00	4.777e+02	3.068e-02
298	2006	-1.102968e+05	8.000e+00	3.795e+02	1.215e-02
299	2011	-1.103106e+05	8.000e+00	3.793e+02	2.773e-02
300	2019	-1.103214e+05	8.000e+00	4.906e+02	2.376e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
301	2024	-1.103423e+05	8.000e+00	5.331e+02	4.757e-02
302	2033	-1.103519e+05	8.000e+00	4.870e+02	1.866e-02
303	2038	-1.103603e+05	8.000e+00	3.800e+02	1.973e-02
304	2046	-1.103680e+05	8.000e+00	4.641e+02	1.698e-02
305	2051	-1.103759e+05	8.000e+00	3.799e+02	1.735e-02
306	2059	-1.103833e+05	8.000e+00	3.797e+02	1.531e-02
307	2064	-1.103952e+05	8.000e+00	5.238e+02	3.132e-02
308	2073	-1.104031e+05	8.000e+00	3.796e+02	1.232e-02
309	2078	-1.104174e+05	8.000e+00	3.795e+02	2.850e-02
310	2086	-1.104289e+05	8.000e+00	4.386e+02	2.456e-02
311	2091	-1.104492e+05	8.000e+00	5.966e+02	4.877e-02
312	2100	-1.104600e+05	8.000e+00	4.348e+02	1.906e-02
313	2105	-1.104687e+05	8.000e+00	3.802e+02	2.048e-02
314	2113	-1.104766e+05	8.000e+00	4.919e+02	1.743e-02
315	2118	-1.104845e+05	8.000e+00	3.802e+02	1.769e-02
316	2126	-1.104920e+05	8.000e+00	3.800e+02	1.560e-02
317	2131	-1.105034e+05	8.000e+00	5.745e+02	3.194e-02
318	2140	-1.105119e+05	8.000e+00	3.798e+02	1.250e-02
319	2145	-1.105267e+05	8.000e+00	3.798e+02	2.929e-02
320	2153	-1.105392e+05	8.000e+00	3.800e+02	2.544e-02
321	2158	-1.105552e+05	8.000e+00	8.150e+02	4.963e-02
322	2167	-1.105686e+05	8.000e+00	3.801e+02	1.856e-02
323	2172	-1.105822e+05	8.000e+00	7.692e+02	4.316e-02
324	2181	-1.105943e+05	8.000e+00	3.801e+02	1.622e-02
325	2186	-1.106116e+05	8.000e+00	4.112e+02	3.870e-02
326	2195	-1.106193e+05	8.000e+00	3.802e+02	1.528e-02
327	2200	-1.106306e+05	8.000e+00	6.048e+02	3.270e-02
328	2209	-1.106395e+05	8.000e+00	3.801e+02	1.274e-02
329	2214	-1.106548e+05	8.000e+00	3.800e+02	3.005e-02
330	2222	-1.106677e+05	8.000e+00	3.803e+02	2.614e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
331	2227	-1.106830e+05	8.000e+00	8.678e+02	5.086e-02
332	2236	-1.106976e+05	8.000e+00	3.803e+02	1.892e-02
333	2241	-1.107121e+05	8.000e+00	7.546e+02	4.446e-02
334	2250	-1.107240e+05	8.000e+00	3.803e+02	1.667e-02
335	2255	-1.107398e+05	8.000e+00	5.444e+02	3.930e-02
336	2264	-1.107486e+05	8.000e+00	3.804e+02	1.513e-02
337	2269	-1.107617e+05	8.000e+00	5.389e+02	3.403e-02
338	2278	-1.107700e+05	8.000e+00	3.804e+02	1.326e-02
339	2283	-1.107848e+05	8.000e+00	3.807e+02	3.055e-02
340	2292	-1.107913e+05	8.000e+00	3.804e+02	1.272e-02
341	2297	-1.108038e+05	8.000e+00	3.807e+02	2.655e-02
342	2306	-1.108097e+05	8.000e+00	3.804e+02	1.107e-02
343	2311	-1.108214e+05	8.000e+00	3.803e+02	2.348e-02
344	2319	-1.108312e+05	8.000e+00	3.806e+02	2.026e-02
345	2324	-1.108436e+05	8.000e+00	7.349e+02	3.953e-02
346	2333	-1.108549e+05	8.000e+00	3.805e+02	1.500e-02
347	2338	-1.108725e+05	8.000e+00	3.808e+02	3.596e-02
348	2347	-1.108798e+05	8.000e+00	3.807e+02	1.498e-02
349	2352	-1.108922e+05	8.000e+00	4.663e+02	3.055e-02
350	2361	-1.108995e+05	8.000e+00	3.806e+02	1.212e-02
351	2366	-1.109132e+05	8.000e+00	3.804e+02	2.754e-02
352	2374	-1.109238e+05	8.000e+00	5.187e+02	2.353e-02
353	2379	-1.109323e+05	8.000e+00	4.400e+02	2.225e-02
354	2388	-1.109385e+05	8.000e+00	3.807e+02	9.348e-03
355	2394	-1.109570e+05	8.000e+00	3.808e+02	3.704e-02
356	2399	-1.109818e+05	8.000e+00	9.570e+02	7.278e-02
357	2409	-1.109963e+05	8.000e+00	3.810e+02	1.316e-02
358	2415	-1.110038e+05	8.000e+00	3.809e+02	1.555e-02
359	2420	-1.110164e+05	8.000e+00	4.803e+02	3.136e-02
360	2429	-1.110240e+05	8.000e+00	3.808e+02	1.239e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
361	2434	-1.110379e+05	8.000e+00	3.806e+02	2.821e-02
362	2443	-1.110440e+05	8.000e+00	3.809e+02	1.198e-02
363	2448	-1.110562e+05	8.000e+00	3.807e+02	2.464e-02
364	2456	-1.110659e+05	8.000e+00	4.548e+02	2.106e-02
365	2461	-1.110830e+05	8.000e+00	5.792e+02	4.211e-02
366	2470	-1.110923e+05	8.000e+00	3.811e+02	1.621e-02
367	2475	-1.111037e+05	8.000e+00	6.981e+02	3.620e-02
368	2484	-1.111142e+05	8.000e+00	3.810e+02	1.389e-02
369	2489	-1.111311e+05	8.000e+00	3.809e+02	3.327e-02
370	2497	-1.111447e+05	8.000e+00	4.620e+02	2.879e-02
371	2502	-1.111701e+05	8.000e+00	5.695e+02	5.726e-02
372	2512	-1.111780e+05	8.000e+00	3.811e+02	1.088e-02
373	2517	-1.111909e+05	8.000e+00	3.812e+02	2.546e-02
374	2522	-1.112463e+05	8.000e+00	1.635e+03	1.771e-01
375	2533	-1.112772e+05	8.000e+00	3.844e+02	1.542e-02
376	2541	-1.112875e+05	8.000e+00	3.813e+02	1.428e-02
377	2546	-1.113043e+05	8.000e+00	3.811e+02	3.398e-02
378	2555	-1.113114e+05	8.000e+00	3.814e+02	1.428e-02
379	2560	-1.113242e+05	8.000e+00	3.819e+02	2.913e-02

Iter	F-count	f(x)	Feasibility	First-order optimality	Norm of step
380	2569	-1.113308e+05	8.000e+00	3.814e+02	1.177e-02
381	2574	-1.113436e+05	8.000e+00	3.812e+02	2.594e-02
382	2582	-1.113535e+05	8.000e+00	5.160e+02	2.209e-02
383	2587	-1.113620e+05	8.000e+00	4.001e+02	2.104e-02
384	2595	-1.113699e+05	8.000e+00	5.473e+02	1.788e-02
385	2600	-1.113779e+05	8.000e+00	3.819e+02	1.828e-02
386	2608	-1.113855e+05	8.000e+00	4.059e+02	1.609e-02
387	2613	-1.113962e+05	8.000e+00	6.529e+02	3.312e-02
388	2622	-1.114058e+05	8.000e+00	3.815e+02	1.288e-02
389	2627	-1.114216e+05	8.000e+00	3.815e+02	3.067e-02
390	2634	-1.114487e+05	8.000e+00	3.817e+02	5.365e-02
391	2639	-1.114911e+05	8.000e+00	9.572e+02	1.064e-01
392	2649	-1.115073e+05	8.000e+00	3.818e+02	1.904e-02
393	2654	-1.115248e+05	8.000e+00	6.519e+02	4.584e-02
394	2663	-1.115351e+05	8.000e+00	4.032e+02	1.727e-02
395	2668	-1.115491e+05	8.000e+00	6.627e+02	3.943e-02
396	2677	-1.115593e+05	8.000e+00	3.819e+02	1.508e-02
397	2682	-1.115751e+05	8.000e+00	4.029e+02	3.532e-02
398	2691	-1.115825e+05	8.000e+00	3.820e+02	1.403e-02
399	2696	-1.115952e+05	8.000e+00	4.491e+02	3.045e-02
400	2705	-1.116024e+05	8.000e+00	3.819e+02	1.211e-02
401	2710	-1.116159e+05	8.000e+00	3.817e+02	2.733e-02
402	2718	-1.116262e+05	8.000e+00	5.611e+02	2.325e-02
403	2723	-1.116345e+05	8.000e+00	4.503e+02	2.192e-02
404	2732	-1.116406e+05	8.000e+00	3.820e+02	9.267e-03
405	2738	-1.116590e+05	8.000e+00	3.821e+02	3.679e-02
406	2743	-1.116868e+05	8.000e+00	8.391e+02	7.257e-02
407	2753	-1.116993e+05	8.000e+00	3.822e+02	1.322e-02
408	2758	-1.117143e+05	8.000e+00	5.193e+02	3.190e-02
409	2763	-1.117443e+05	8.000e+00	5.091e+02	6.369e-02
410	2773	-1.117520e+05	8.000e+00	3.822e+02	1.222e-02
411	2778	-1.117662e+05	8.000e+00	3.820e+02	2.812e-02
412	2786	-1.117773e+05	8.000e+00	4.871e+02	2.414e-02
413	2791	-1.117985e+05	8.000e+00	5.438e+02	4.825e-02
414	2801	-1.118055e+05	8.000e+00	3.824e+02	9.283e-03
415	2808	-1.118148e+05	8.000e+00	3.824e+02	1.870e-02
416	2813	-1.118303e+05	8.000e+00	4.902e+02	3.697e-02
417	2822	-1.118384e+05	8.000e+00	3.824e+02	1.440e-02
418	2827	-1.118516e+05	8.000e+00	4.765e+02	3.207e-02
419	2836	-1.118591e+05	8.000e+00	3.824e+02	1.265e-02
420	2841	-1.118731e+05	8.000e+00	3.827e+02	2.867e-02
421	2850	-1.118793e+05	8.000e+00	3.825e+02	1.201e-02
422	2855	-1.118915e+05	8.000e+00	3.822e+02	2.506e-02
423	2863	-1.119010e+05	8.000e+00	5.307e+02	2.125e-02
424	2868	-1.119093e+05	8.000e+00	3.841e+02	2.032e-02
425	2876	-1.119172e+05	8.000e+00	5.164e+02	1.742e-02
426	2881	-1.119251e+05	8.000e+00	3.829e+02	1.784e-02
427	2889	-1.119326e+05	8.000e+00	3.827e+02	1.572e-02

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  428    2894   -1.119436e+05    8.000e+00    6.176e+02    3.222e-02
  429    2903   -1.119526e+05    8.000e+00    3.825e+02    1.257e-02
  430    2908   -1.119679e+05    8.000e+00    3.825e+02    2.971e-02
  431    2915   -1.119935e+05    8.000e+00    4.586e+02    5.189e-02
  432    2920   -1.120155e+05    8.000e+00    5.763e+02    5.086e-02
  433    2930   -1.120230e+05    8.000e+00    3.828e+02    9.700e-03
  434    2937   -1.120328e+05    8.000e+00    3.828e+02    1.968e-02
  435    2942   -1.120482e+05    8.000e+00    5.626e+02    3.875e-02
  436    2951   -1.120571e+05    8.000e+00    3.829e+02    1.490e-02
  437    2956   -1.120707e+05    8.000e+00    5.057e+02    3.377e-02
  438    2965   -1.120787e+05    8.000e+00    3.828e+02    1.321e-02
  439    2970   -1.120929e+05    8.000e+00    3.832e+02    3.006e-02
  440    2979   -1.120994e+05    8.000e+00    3.829e+02    1.237e-02
  441    2984   -1.121119e+05    8.000e+00    3.832e+02    2.626e-02
  442    2993   -1.121178e+05    8.000e+00    3.829e+02    1.097e-02
  443    2998   -1.121294e+05    8.000e+00    3.827e+02    2.320e-02

Solver stopped prematurely.

fmincon stopped because it exceeded the function evaluation limit,
options.MaxFunctionEvaluations = 3.000000e+03.

Serial FMINCON optimization takes 661.503 seconds.
```

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