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## Table of Contents

.....	1
original data .....	1
random weights of simu shots .....	2
sparsifying transform .....	3
reconstruct .....	4
if given known strict sparse vector .....	33
if given known compressible vector .....	44

```
% random weights of simu shots

clear; close all;
cd ./simu_functions/
addpath(genpath(pwd))
cd ../../
addpath(genpath(pwd))
cd ../../../../pqn11;
addpath(genpath(pwd))

cd ../experiments/help_spg11/modifying/task11lasso/seismic
rmpath('/Volumes/Users/linamiao/Dropbox/PQN/pqn11/minConF/')
```

## original data

Number of time samples

```
nt = 1024;
% Number of sources
ns = 178;
% Number of receivers
nr = 178;

% Read data
D = ReadSuFast('GulfOfSuez178.su');
D = reshape(D,nt,nr,ns);

% Select small subset
D = D(1:256,30,1:50);

% Define new data sizes
[nt,nr,ns] = size(D);

% Vectorize D
D = D(:);

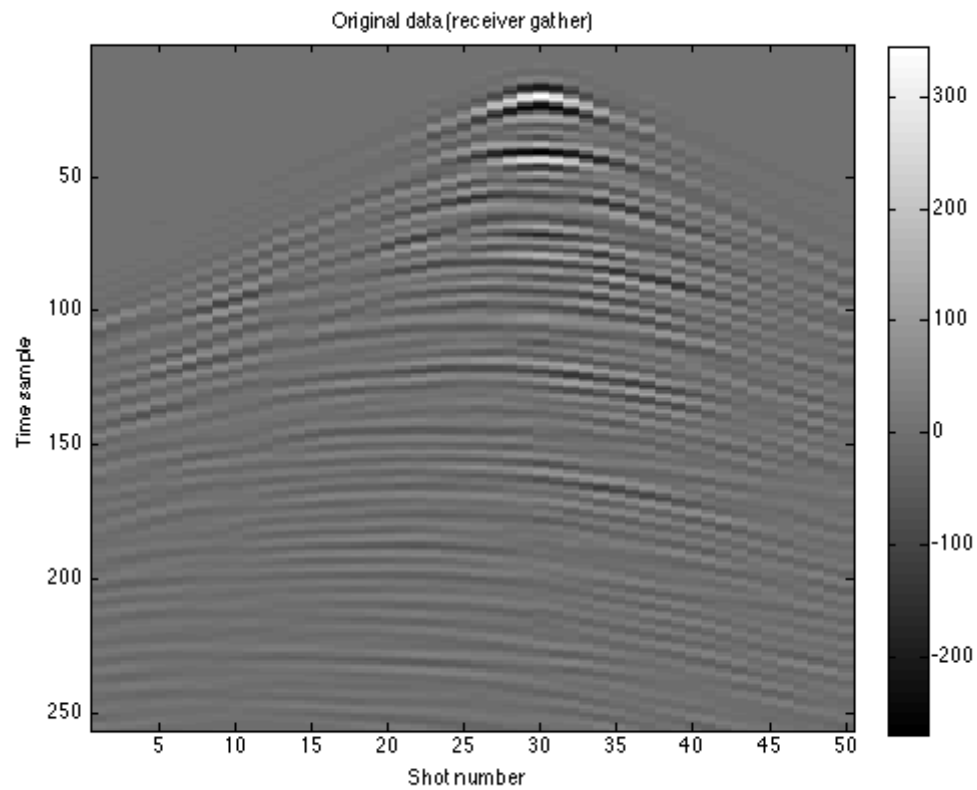
% Display
figure
imagesc(reshape(D,nt,ns)); colormap(gray); colorbar;
```

---

```

title('Original data (receiver gather)');
xlabel('Shot number'); ylabel('Time sample')

```



## random weights of simu shots

```

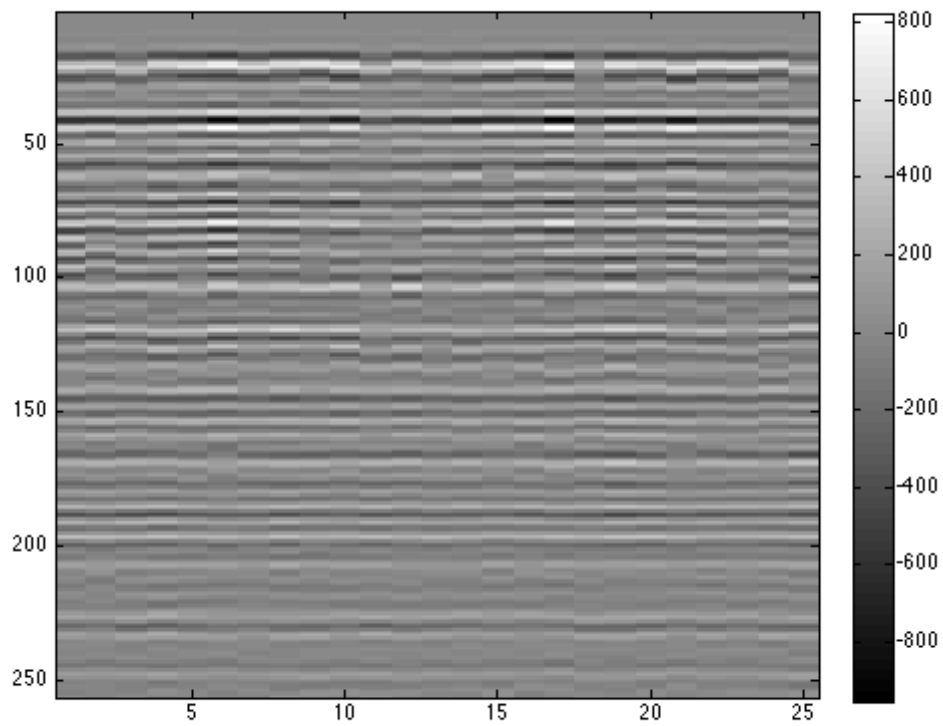
p = .5;
nse = p*ns;
SS = rand(nse,ns);
Dt = opDirac(nt);
Dr = opDirac(nr);
RM = opKron(SS,Dr,Dt);

x_test = rand(size(RM,2),1);
y_test = rand(size(RM,1),1);
left = y_test'*(RM*x_test);
right = (RM'*y_test)'*x_test;
error = norm(left-right);
fprintf('In dottest error:%5.5e\n',error);

simD1 = RM*D;
figure;
imagesc(reshape(simD1,nt,nse)); colormap(gray); colorbar;

```

*In dottest error:7.27596e-12*

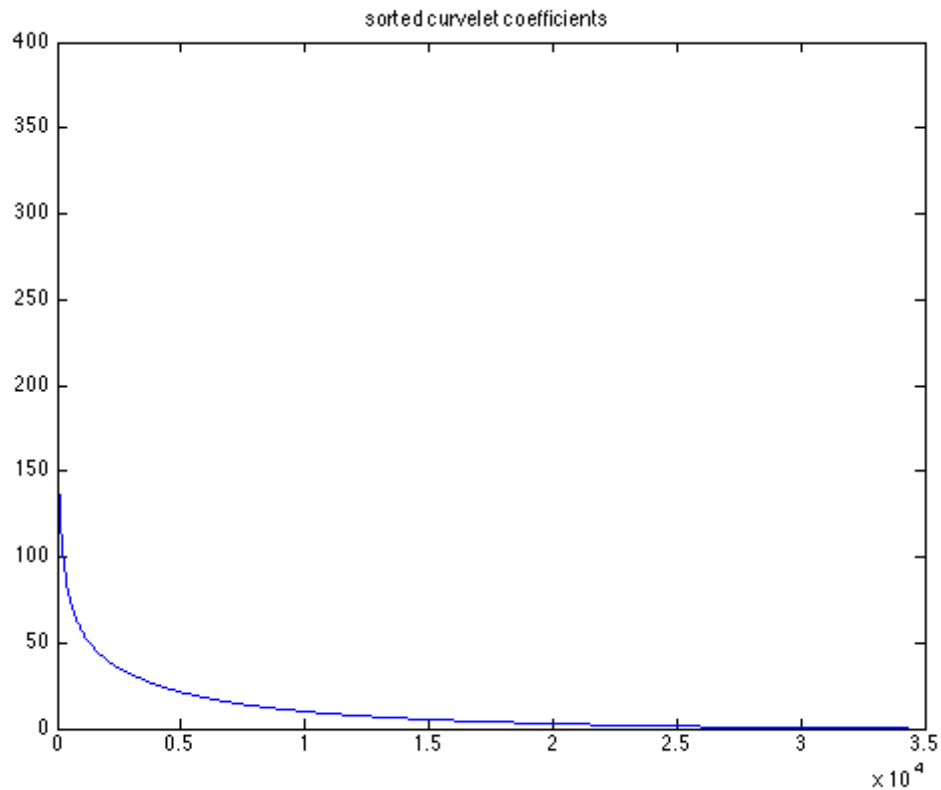


## sparsifying transform

Use this to create a Curvelet SPOT operator:

```
C = opCurvelet(nt, ns);
```

```
% Transform the data into the Curvelet domain and plot the sorted coefficients  
C_D = C*D;  
sort_CD = sort(abs(C_D), 'descend');  
figure; plot(sort_CD); title('sorted curvelet coefficients')
```



## reconstruct

```
A = RM*C';

options = spgSetParms('optTol', 1e-4, 'iterations', 1000);%, 'fid', fid);
xestspg = spgll(A,simD1,0,1e-3,[],options);
tau = norm(xestspg,1);
%tau = 2.5572179e+05;

options = spgSetParms('optTol', 1e-4, 'iterations', 200);%, 'fid', fid);
xinit = zeros(size(A,2),1);

which spgll
%keyboard;
xestspg = spgll(A,simD1,tau,[],xinit,options);
%options.iterations = 100;
xestpqn = pqnll_2(A,simD1,tau,[],xinit,options);
fspg = C'*xestspg;
snrspg = SNR(D,fspg);
fpqn = C'*xestpqn;
snrpqn = SNR(D,fpqn);

figure;
subplot(1,2,1);imagesc(reshape(fspg,nt,ns)); colormap(gray);
```

---

```

title(strcat(['p = .5, SNR=' num2str(snrspg) 'dB']))
subplot(1,2,2);imagesc(reshape(fspg-D,nt,ns)); colormap(gray);
title('difference')

```

```

figure;
subplot(1,2,1);imagesc(reshape(fpqn,nt,ns)); colormap(gray);
title(strcat(['p = .5, SNR=' num2str(snrpqn) 'dB']))
subplot(1,2,2);imagesc(reshape(fpqn-D,nt,ns)); colormap(gray);
title('difference')

```

```

=====
SPGL1_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017
=====

```

No. rows	:	6400	No. columns	:	34341
Initial tau	:	0.00e+00	Two-norm of b	:	1.56e+04
Optimality tol	:	1.00e-04	Target objective	:	1.00e-03
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	1000

Iter	Objective	Relative Gap	Rel Error	gNorm	stepG	nnzX
0	1.5573440e+04	0.0000000e+00	1.00e+00	1.119e+04	0.0	0
1	1.5344872e+04	1.9284050e+00	1.00e+00	1.045e+04	-0.3	1
2	1.3130791e+04	2.0016991e+00	1.00e+00	7.882e+03	-0.3	281
3	8.7196207e+03	1.8913846e+00	1.00e+00	5.209e+03	0.0	2452
4	8.4345681e+03	4.7634170e-01	1.00e+00	2.738e+03	0.0	2521
5	8.3877215e+03	4.1276723e-01	1.00e+00	2.646e+03	0.0	2336
6	8.3130192e+03	3.5558641e-01	1.00e+00	2.528e+03	0.0	2075
7	8.3318301e+03	1.6786246e+00	1.00e+00	4.744e+03	0.0	1709
8	8.2783548e+03	1.2195308e+00	1.00e+00	3.788e+03	-0.3	1741
9	8.1850474e+03	5.6905765e-01	1.00e+00	2.916e+03	0.0	1813
10	8.1728513e+03	3.0890151e-01	1.00e+00	2.501e+03	0.0	1711
11	8.1595144e+03	3.1136283e-01	1.00e+00	2.512e+03	0.0	1583
12	8.0739218e+03	3.3311612e-01	1.00e+00	2.511e+03	0.0	1097
13	8.0621179e+03	4.1514811e-01	1.00e+00	2.689e+03	-0.3	1148
14	8.0452930e+03	3.6501931e-01	1.00e+00	2.583e+03	0.0	1153
15	8.0377857e+03	2.1444653e-01	1.00e+00	2.374e+03	0.0	1099
16	8.0320883e+03	2.2010127e-01	1.00e+00	2.380e+03	0.0	1048
17	8.0200594e+03	2.4787407e-01	1.00e+00	2.428e+03	0.0	991
18	8.0190532e+03	1.0073836e+00	1.00e+00	3.525e+03	-0.3	920
19	8.0042316e+03	2.2022831e-01	1.00e+00	2.383e+03	-0.3	955
20	7.9991339e+03	1.9887657e-01	1.00e+00	2.352e+03	0.0	949
21	7.9957284e+03	2.0325727e-01	1.00e+00	2.358e+03	0.0	903
22	7.9622793e+03	3.4472129e-01	1.00e+00	2.567e+03	0.0	743
23	7.9731003e+03	4.8849487e-01	1.00e+00	2.746e+03	-0.3	753
24	7.9663122e+03	1.1131044e+00	1.00e+00	3.696e+03	0.0	778
25	7.9509013e+03	2.1435585e-01	1.00e+00	2.367e+03	0.0	730
26	7.9485315e+03	1.9764396e-01	1.00e+00	2.345e+03	0.0	729
27	7.9460700e+03	1.8633774e-01	1.00e+00	2.329e+03	0.0	715
28	7.9225734e+03	2.3308851e-01	1.00e+00	2.395e+03	0.0	620
29	7.9172472e+03	2.8637086e-01	1.00e+00	2.459e+03	-0.3	647
30	7.9171853e+03	8.0236765e-01	1.00e+00	3.219e+03	0.0	650
31	5.2522988e+03	4.7396868e+00	1.00e+00	1.588e+03	0.0	3885
32	5.0455474e+03	1.4139010e+00	1.00e+00	7.105e+02	0.0	6959

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33	5.0191847e+03	1.4208602e+00	1.00e+00	7.065e+02	0.0	6264
34	4.9237832e+03	1.0605201e+00	1.00e+00	6.756e+02	0.0	4740
35	4.9550103e+03	3.2320507e+00	1.00e+00	1.193e+03	-0.3	3534
36	4.9751451e+03	3.8267986e+00	1.00e+00	1.508e+03	0.0	4580
37	4.8436479e+03	1.1881084e+00	1.00e+00	6.580e+02	0.0	4160
38	4.8338688e+03	1.1584110e+00	1.00e+00	6.554e+02	0.0	3880
39	4.8183995e+03	1.1210676e+00	1.00e+00	6.496e+02	0.0	3429
40	4.7451627e+03	2.0849834e+00	1.00e+00	9.699e+02	0.0	2033
41	4.7797529e+03	3.4292335e+00	1.00e+00	1.359e+03	-0.3	2274
42	4.7275143e+03	2.9724530e+00	1.00e+00	1.191e+03	0.0	2837
43	4.7036777e+03	7.2760762e-01	1.00e+00	5.887e+02	0.0	2662
44	4.7007231e+03	7.3712173e-01	1.00e+00	5.884e+02	0.0	2429
45	4.6920113e+03	7.6139714e-01	1.00e+00	5.877e+02	0.0	2070
46	4.6848284e+03	3.3500990e+00	1.00e+00	1.264e+03	0.0	1616
47	4.6764137e+03	1.9932584e+00	1.00e+00	9.186e+02	-0.3	1829
48	4.6517619e+03	8.7674013e-01	1.00e+00	6.067e+02	0.0	2200
49	4.6486508e+03	7.4038974e-01	1.00e+00	5.714e+02	0.0	1913
50	4.6459607e+03	7.3557562e-01	1.00e+00	5.705e+02	0.0	1711
51	4.6367249e+03	7.0387298e-01	1.00e+00	5.656e+02	0.0	1542
52	4.6483513e+03	3.3974968e+00	1.00e+00	1.277e+03	-0.3	1565
53	4.6299486e+03	7.4491785e-01	1.00e+00	5.781e+02	-0.3	1627
54	4.6281066e+03	6.7888393e-01	1.00e+00	5.610e+02	0.0	1599
55	4.6267521e+03	6.7770427e-01	1.00e+00	5.606e+02	0.0	1556
56	4.6107948e+03	1.5308611e+00	1.00e+00	7.815e+02	0.0	1337
57	4.6087064e+03	6.6900230e-01	1.00e+00	5.659e+02	-0.3	1439
58	4.6051211e+03	1.4379000e+00	1.00e+00	7.593e+02	0.0	1455
59	4.6031307e+03	6.1428631e-01	1.00e+00	5.482e+02	0.0	1391
60	4.6023361e+03	6.1419924e-01	1.00e+00	5.479e+02	0.0	1349
61	4.5991601e+03	6.0724265e-01	1.00e+00	5.463e+02	0.0	1307
62	4.5966016e+03	1.7148042e+00	1.00e+00	8.303e+02	-0.3	1311
63	4.5933559e+03	5.8667347e-01	1.00e+00	5.429e+02	-0.3	1324
64	4.5923012e+03	5.8950413e-01	1.00e+00	5.427e+02	0.0	1310
65	4.5911629e+03	5.8793245e-01	1.00e+00	5.423e+02	0.0	1294
66	4.5873523e+03	2.0052205e+00	1.00e+00	9.039e+02	0.0	1229
67	4.5842833e+03	5.6731574e-01	1.00e+00	5.387e+02	-0.3	1246
68	4.5831118e+03	5.7080563e-01	1.00e+00	5.385e+02	0.0	1243
69	4.5822778e+03	5.6927031e-01	1.00e+00	5.381e+02	0.0	1222
70	4.5788585e+03	1.1138061e+00	1.00e+00	6.764e+02	0.0	1180
71	4.5781768e+03	8.6719820e-01	1.00e+00	6.155e+02	-0.3	1190
72	4.5767517e+03	7.4642709e-01	1.00e+00	5.835e+02	0.0	1183
73	4.5759236e+03	5.5324318e-01	1.00e+00	5.348e+02	0.0	1182
74	4.5752370e+03	5.5198607e-01	1.00e+00	5.344e+02	0.0	1175
75	4.5713476e+03	8.8973105e-01	1.00e+00	6.210e+02	0.0	1149
76	4.5714175e+03	1.0789591e+00	1.00e+00	6.690e+02	-0.3	1153
77	4.3880831e+03	6.3624596e+00	1.00e+00	6.884e+02	0.0	34262
78	4.1180357e+03	3.3552677e+00	1.00e+00	5.019e+02	0.0	34261
79	4.0032464e+03	3.9719180e+00	1.00e+00	4.921e+02	0.0	34277
80	3.7479059e+03	3.2663577e+00	1.00e+00	4.452e+02	0.0	28435
81	3.7670017e+03	1.3037494e+01	1.00e+00	1.130e+03	0.0	11226
82	3.9575724e+03	1.3006703e+01	1.00e+00	1.736e+03	-0.3	15341
83	3.4666342e+03	3.7786420e+00	1.00e+00	3.843e+02	0.0	14167
84	3.4496379e+03	3.5808967e+00	1.00e+00	3.798e+02	0.0	12714
85	3.3751012e+03	3.0028669e+00	1.00e+00	3.555e+02	0.0	9253
86	3.3688257e+03	1.0359829e+01	1.00e+00	8.452e+02	-0.3	6873

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87	3.3085921e+03	3.1703751e+00	1.00e+00	3.352e+02	-0.3	8273
88	3.2870555e+03	3.2372730e+00	1.00e+00	3.318e+02	0.0	8453
89	3.2630512e+03	2.8497429e+00	1.00e+00	3.223e+02	0.0	6562
90	3.2452777e+03	9.6806448e+00	1.00e+00	7.967e+02	0.0	5642
91	3.2245164e+03	3.1705256e+00	1.00e+00	3.381e+02	-0.3	6045
92	3.2146658e+03	2.8049012e+00	1.00e+00	3.073e+02	0.0	5727
93	3.2047499e+03	2.7019097e+00	1.00e+00	3.037e+02	0.0	5362
94	3.1856480e+03	1.2065702e+01	1.00e+00	9.524e+02	0.0	4767
95	3.1709968e+03	3.5662491e+00	1.00e+00	3.629e+02	-0.3	4954
96	3.1631901e+03	2.5765626e+00	1.00e+00	2.896e+02	0.0	4829
97	3.1571273e+03	2.5401169e+00	1.00e+00	2.876e+02	0.0	4663
98	3.1289114e+03	5.7737866e+00	1.00e+00	5.045e+02	0.0	4179
99	3.1405586e+03	1.8022071e+01	1.00e+00	1.347e+03	-0.3	4234
100	3.1182842e+03	6.5271638e+00	1.00e+00	5.485e+02	0.0	4285
101	3.1111371e+03	2.3649656e+00	1.00e+00	2.713e+02	0.0	4224
102	3.1086588e+03	2.3562627e+00	1.00e+00	2.705e+02	0.0	4135
103	3.0493560e+03	1.5951844e+01	1.00e+00	1.162e+03	0.0	3126
104	3.0544861e+03	1.6145930e+01	1.00e+00	1.163e+03	-0.3	3353
105	3.0260181e+03	2.2199791e+00	1.00e+00	2.642e+02	0.0	4093
106	3.0240859e+03	1.7514410e+00	1.00e+00	2.329e+02	0.0	3690
107	3.0200962e+03	1.8196809e+00	1.00e+00	2.326e+02	0.0	3376
108	2.9994928e+03	2.7228048e+00	1.00e+00	2.740e+02	0.0	2912
109	3.0073916e+03	1.1915001e+01	1.00e+00	8.642e+02	-0.3	3011
110	2.9969212e+03	7.0246490e+00	1.00e+00	5.463e+02	0.0	3019
111	2.9875258e+03	1.7615454e+00	1.00e+00	2.222e+02	0.0	3203
112	2.9862446e+03	1.7579843e+00	1.00e+00	2.219e+02	0.0	2987
113	2.9738986e+03	6.2772193e+00	1.00e+00	5.023e+02	0.0	2704
114	2.9731643e+03	3.2036915e+00	1.00e+00	3.119e+02	-0.3	2771
115	2.9679876e+03	1.6314431e+00	1.00e+00	2.160e+02	0.0	2967
116	2.9670399e+03	1.6341384e+00	1.00e+00	2.158e+02	0.0	2801
117	2.9632136e+03	1.6421711e+00	1.00e+00	2.147e+02	0.0	2696
118	2.9441091e+03	1.5564910e+01	1.00e+00	1.053e+03	-0.3	2327
119	2.9346244e+03	7.9376056e+00	1.00e+00	5.944e+02	-0.3	2513
120	2.9212684e+03	1.3663457e+00	1.00e+00	1.974e+02	0.0	3669
121	2.9199564e+03	1.3658469e+00	1.00e+00	1.972e+02	0.0	2951
122	2.9145724e+03	1.7254963e+00	1.00e+00	2.141e+02	0.0	2445
123	2.9134570e+03	1.4008905e+00	1.00e+00	1.957e+02	-0.3	2483
124	2.9122687e+03	3.3644140e+00	1.00e+00	3.116e+02	0.0	2409
125	2.9111107e+03	1.3822458e+00	1.00e+00	1.950e+02	0.0	2394
126	2.9101321e+03	1.3724898e+00	1.00e+00	1.947e+02	0.0	2381
127	2.9093934e+03	1.3710418e+00	1.00e+00	1.945e+02	0.0	2362
128	2.9070953e+03	1.8821626e+00	1.00e+00	2.243e+02	0.0	2308
129	2.9061773e+03	1.8994894e+00	1.00e+00	2.249e+02	-0.3	2318
130	2.9053445e+03	3.8046616e+00	1.00e+00	3.363e+02	0.0	2287
131	2.9042085e+03	1.8043566e+00	1.00e+00	2.193e+02	0.0	2284
132	2.9034363e+03	1.3429499e+00	1.00e+00	1.925e+02	0.0	2277
133	2.9026917e+03	1.3407580e+00	1.00e+00	1.923e+02	0.0	2266
134	2.8994759e+03	3.2879575e+00	1.00e+00	3.052e+02	0.0	2225
135	2.9008766e+03	6.4308657e+00	1.00e+00	4.873e+02	-0.3	2234
136	2.8976161e+03	4.0313673e+00	1.00e+00	3.479e+02	0.0	2242
137	2.8962408e+03	1.3132565e+00	1.00e+00	1.901e+02	0.0	2230
138	2.8957716e+03	1.3107308e+00	1.00e+00	1.900e+02	0.0	2219
139	2.8834907e+03	1.2408352e+00	1.00e+00	1.855e+02	0.0	2119
140	2.8892887e+03	1.3871060e+01	1.00e+00	9.134e+02	-0.3	2143

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141	2.8792613e+03	1.1807826e+00	1.00e+00	1.823e+02	-0.3	2354
142	2.8772358e+03	1.1988256e+00	1.00e+00	1.823e+02	0.0	2381
143	2.8757464e+03	1.2010767e+00	1.00e+00	1.822e+02	0.0	2193
144	2.8741760e+03	1.1877437e+00	1.00e+00	1.815e+02	0.0	2122
145	2.8735428e+03	5.2484614e+00	1.00e+00	4.127e+02	-0.3	2121
146	2.8729322e+03	1.7650030e+00	1.00e+00	2.143e+02	0.0	2129
147	2.8713140e+03	1.1803929e+00	1.00e+00	1.807e+02	0.0	2160
148	2.8709009e+03	1.1772475e+00	1.00e+00	1.806e+02	0.0	2111
149	2.8696260e+03	1.1709718e+00	1.00e+00	1.802e+02	0.0	2078
150	2.8665670e+03	1.5013248e+01	1.00e+00	9.657e+02	-0.3	1954
151	2.8562112e+03	1.0447525e+00	1.00e+00	1.744e+02	-0.3	2010
152	2.8528793e+03	1.0800430e+00	1.00e+00	1.742e+02	0.0	2339
153	2.8521942e+03	1.0798803e+00	1.00e+00	1.741e+02	0.0	2062
154	2.8496567e+03	1.0787704e+00	1.00e+00	1.735e+02	0.0	1962
155	2.8486235e+03	1.0764995e+00	1.00e+00	1.738e+02	-0.3	1991
156	2.8479560e+03	3.7718989e+00	1.00e+00	3.239e+02	-0.3	2033
157	2.8468573e+03	1.0623100e+00	1.00e+00	1.727e+02	0.0	2008
158	2.8462080e+03	1.0640801e+00	1.00e+00	1.726e+02	0.0	2000
159	2.8458203e+03	1.0614056e+00	1.00e+00	1.725e+02	0.0	1966
160	2.8442322e+03	1.4382746e+00	1.00e+00	1.933e+02	0.0	1941
161	2.8446981e+03	4.8178954e+00	1.00e+00	3.825e+02	-0.3	1943
162	2.8425923e+03	1.3896092e+00	1.00e+00	1.905e+02	-0.3	1963
163	2.8421712e+03	1.0494667e+00	1.00e+00	1.715e+02	0.0	1946
164	2.8417802e+03	1.0483272e+00	1.00e+00	1.714e+02	0.0	1932
165	2.8302414e+03	4.1105617e+00	1.00e+00	3.407e+02	0.0	1816
166	2.8376910e+03	1.0920288e+01	1.00e+00	7.208e+02	-0.3	1886
167	2.8278716e+03	2.6173811e+00	1.00e+00	2.564e+02	0.0	2265
168	2.8270247e+03	1.0144539e+00	1.00e+00	1.680e+02	0.0	2036
169	2.8266228e+03	1.0125987e+00	1.00e+00	1.679e+02	0.0	1941
170	2.8247566e+03	9.0614252e+00	1.00e+00	6.123e+02	0.0	1807
171	2.8264382e+03	8.0185353e+00	1.00e+00	5.554e+02	-0.3	1883
172	2.8214148e+03	1.1726146e+00	1.00e+00	1.771e+02	0.0	2052
173	2.8211477e+03	9.8381572e-01	1.00e+00	1.667e+02	0.0	1922
174	2.8206647e+03	9.8540434e-01	1.00e+00	1.667e+02	0.0	1855
175	2.8078437e+03	5.1792604e+00	1.00e+00	3.915e+02	0.0	1666
176	2.8199321e+03	1.3915656e+01	1.00e+00	8.789e+02	-0.3	1792
177	2.8043710e+03	2.0550688e+00	1.00e+00	2.217e+02	0.0	2593
178	2.8030907e+03	9.5087454e-01	1.00e+00	1.622e+02	0.0	2186
179	2.8025065e+03	9.5042138e-01	1.00e+00	1.621e+02	0.0	1980
180	2.8026033e+03	8.1964513e+00	1.00e+00	5.567e+02	-0.3	1707
181	2.7658625e+03	4.1198601e+01	1.00e+00	1.766e+03	-0.3	31200
182	2.7578212e+03	4.3971058e+01	1.00e+00	2.097e+03	0.0	27361
183	2.5134290e+03	2.2952200e+00	1.00e+00	1.421e+02	0.0	25543
184	2.5001283e+03	2.0881542e+00	1.00e+00	1.401e+02	0.0	22837
185	2.4423606e+03	1.7304829e+00	1.00e+00	1.319e+02	0.0	12909
186	2.4915302e+03	3.1986330e+01	1.00e+00	1.204e+03	0.0	4401
187	2.3981490e+03	1.0425295e+01	1.00e+00	4.297e+02	-0.3	6082
188	2.3707030e+03	2.2816300e+00	1.00e+00	1.430e+02	0.0	9654
189	2.3643716e+03	1.4373140e+00	1.00e+00	1.185e+02	0.0	7588
190	2.3496673e+03	2.5213621e+00	1.00e+00	1.532e+02	0.0	5128
191	2.3516575e+03	6.6611459e+00	1.00e+00	2.832e+02	-0.3	4764
192	2.3474052e+03	6.9782681e+00	1.00e+00	2.956e+02	0.0	4819
193	2.3415022e+03	1.9930162e+00	1.00e+00	1.361e+02	0.0	4660
194	2.3404694e+03	1.3399877e+00	1.00e+00	1.155e+02	0.0	4478

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195	2.3392852e+03	1.3312860e+00	1.00e+00	1.152e+02	0.0	4267
196	2.3310944e+03	5.2870537e+00	1.00e+00	2.382e+02	0.0	3446
197	2.3303753e+03	7.7536997e+00	1.00e+00	3.167e+02	-0.3	3655
198	2.3270263e+03	2.3963342e+00	1.00e+00	1.477e+02	0.0	3661
199	2.3262830e+03	1.2206853e+00	1.00e+00	1.112e+02	0.0	3567
200	2.3256762e+03	1.2106201e+00	1.00e+00	1.110e+02	0.0	3494
201	2.3199782e+03	7.5114563e+00	1.00e+00	3.087e+02	0.0	3076
202	2.3215207e+03	8.9777135e+00	1.00e+00	3.527e+02	-0.3	3208
203	2.3173979e+03	2.8373149e+00	1.00e+00	1.620e+02	0.0	3327
204	2.3169392e+03	1.1071876e+00	1.00e+00	1.082e+02	0.0	3181
205	2.3165527e+03	1.1066789e+00	1.00e+00	1.081e+02	0.0	3121
206	2.3115286e+03	4.3570355e+00	1.00e+00	2.075e+02	0.0	2829
207	2.3116977e+03	6.8441169e+00	1.00e+00	2.858e+02	-0.3	3018
208	2.3093180e+03	2.0190218e+00	1.00e+00	1.354e+02	0.0	2999
209	2.3087340e+03	1.0484397e+00	1.00e+00	1.058e+02	0.0	2958
210	2.3083917e+03	1.0419535e+00	1.00e+00	1.058e+02	0.0	2898
211	2.3058885e+03	1.5698513e+00	1.00e+00	1.228e+02	0.0	2756
212	2.3063359e+03	5.8416473e+00	1.00e+00	2.527e+02	-0.3	2785
213	2.3048982e+03	3.7902901e+00	1.00e+00	1.903e+02	-0.3	2793
214	2.3042588e+03	1.0073067e+00	1.00e+00	1.047e+02	0.0	2766
215	2.3040752e+03	1.0038111e+00	1.00e+00	1.046e+02	0.0	2754
216	2.3024688e+03	9.8400572e-01	1.00e+00	1.042e+02	0.0	2686
217	2.3009951e+03	6.1796376e+00	1.00e+00	2.633e+02	-0.3	2692
218	2.3026884e+03	7.3899096e+00	1.00e+00	2.995e+02	-0.3	2764
219	2.2989970e+03	2.0239593e+00	1.00e+00	1.362e+02	0.0	2990
220	2.2987160e+03	9.4855784e-01	1.00e+00	1.032e+02	0.0	2787
221	2.2984383e+03	9.4901740e-01	1.00e+00	1.031e+02	0.0	2708
222	2.2947591e+03	1.7999214e+00	1.00e+00	1.281e+02	0.0	2498
223	2.2944310e+03	2.7842580e+00	1.00e+00	1.589e+02	-0.3	2588
224	2.2942786e+03	4.1673748e+00	1.00e+00	2.001e+02	0.0	2553
225	2.2931588e+03	1.1872467e+00	1.00e+00	1.100e+02	0.0	2577
226	2.2929663e+03	9.5277278e-01	1.00e+00	1.029e+02	0.0	2547
227	2.2927037e+03	9.4970982e-01	1.00e+00	1.029e+02	0.0	2519
228	2.2873352e+03	1.7880326e+00	1.00e+00	1.291e+02	0.0	2380
229	2.2879561e+03	5.5065295e+00	1.00e+00	2.406e+02	-0.3	2436
230	2.2868364e+03	6.0776111e+00	1.00e+00	2.575e+02	0.0	2477
231	2.2859181e+03	9.5154479e-01	1.00e+00	1.027e+02	0.0	2440
232	2.2857635e+03	9.4979268e-01	1.00e+00	1.027e+02	0.0	2414
233	2.2842675e+03	5.6598419e+00	1.00e+00	2.454e+02	0.0	2336
234	2.2841176e+03	1.7649435e+00	1.00e+00	1.275e+02	-0.3	2390
235	2.2835449e+03	1.4583068e+00	1.00e+00	1.183e+02	0.0	2391
236	2.2834113e+03	9.3888596e-01	1.00e+00	1.026e+02	0.0	2369
237	2.2831571e+03	9.4198903e-01	1.00e+00	1.026e+02	0.0	2349
238	2.2828949e+03	1.2859336e+01	1.00e+00	4.604e+02	0.0	2251
239	2.2797341e+03	9.5530598e-01	1.00e+00	1.028e+02	-0.3	2280
240	2.2789102e+03	9.6525927e-01	1.00e+00	1.027e+02	0.0	2374
241	2.2784946e+03	9.5925456e-01	1.00e+00	1.027e+02	0.0	2283
242	2.2777928e+03	5.7539822e+00	1.00e+00	2.473e+02	0.0	2219
243	2.2773416e+03	3.3977183e+00	1.00e+00	1.762e+02	-0.3	2285
244	2.2766911e+03	9.3953961e-01	1.00e+00	1.025e+02	0.0	2283
245	2.2765786e+03	9.4189437e-01	1.00e+00	1.025e+02	0.0	2260
246	2.1841334e+03	1.0761507e+01	1.00e+00	1.901e+02	0.0	34235
247	2.1139790e+03	5.4607887e+00	1.00e+00	1.469e+02	-0.3	34260
248	2.0470241e+03	6.6626718e+00	1.00e+00	1.221e+02	0.0	34281

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249	1.9944251e+03	3.1535584e+00	1.00e+00	8.524e+01	0.0	34286
250	1.9078465e+03	8.5438684e+00	1.00e+00	1.276e+02	0.0	34306
251	1.8780875e+03	1.2429770e+01	1.00e+00	2.283e+02	-0.3	34301
252	1.8352749e+03	2.0936263e+01	1.00e+00	2.435e+02	0.0	34314
253	1.7306530e+03	3.2155307e+00	1.00e+00	7.114e+01	0.0	34322
254	1.7026609e+03	4.6497558e+00	1.00e+00	7.722e+01	0.0	34319
255	1.5804784e+03	3.4452997e+00	1.00e+00	6.288e+01	0.0	34315
256	1.7096676e+03	5.3856776e+01	1.00e+00	5.006e+02	0.0	17842
257	1.3746613e+03	2.4462788e+01	1.00e+00	2.095e+02	-0.3	21863
258	1.3378535e+03	6.7815931e+00	1.00e+00	6.445e+01	0.0	33949
259	1.3286500e+03	4.5349015e+00	1.00e+00	5.132e+01	0.0	26045
260	1.3087761e+03	1.0042799e+01	1.00e+00	7.965e+01	0.0	20527
261	1.3031916e+03	1.3052542e+01	1.00e+00	1.090e+02	-0.3	20686
262	1.2990756e+03	2.7082433e+01	1.00e+00	1.783e+02	0.0	19879
263	1.2906786e+03	1.0402719e+01	1.00e+00	8.860e+01	0.0	19616
264	1.2862672e+03	5.7625182e+00	1.00e+00	5.508e+01	0.0	19085
265	1.2815865e+03	4.4820577e+00	1.00e+00	4.884e+01	0.0	18512
266	1.2584748e+03	4.1719556e+01	1.00e+00	2.582e+02	0.0	15769
267	1.2612945e+03	5.6602909e+01	1.00e+00	3.556e+02	-0.3	16311
268	1.2476860e+03	1.3040883e+01	1.00e+00	9.498e+01	0.0	16067
269	1.2456842e+03	4.4448367e+00	1.00e+00	4.683e+01	0.0	15699
270	1.2413848e+03	4.4371434e+00	1.00e+00	4.660e+01	0.0	15259
271	1.2331620e+03	1.4783975e+02	1.00e+00	8.660e+02	-0.3	10261
272	1.1773567e+03	6.8825493e+01	1.00e+00	3.729e+02	-0.3	12643
273	1.1662189e+03	1.4089356e+01	1.00e+00	9.442e+01	0.0	14956
274	1.1641730e+03	3.5452155e+00	1.00e+00	4.165e+01	0.0	13805
275	1.1600708e+03	6.4265667e+00	1.00e+00	5.487e+01	0.0	12421
276	1.1619449e+03	8.3467197e+01	1.00e+00	4.287e+02	0.0	10604
277	1.1511064e+03	1.2442549e+01	1.00e+00	8.168e+01	-0.3	11647
278	1.1493754e+03	3.6123393e+00	1.00e+00	3.894e+01	0.0	11213
279	1.1477760e+03	3.4574240e+00	1.00e+00	3.882e+01	0.0	10600
280	1.1413446e+03	2.2240674e+01	1.00e+00	1.254e+02	0.0	9838
281	1.1419709e+03	4.3528258e+01	1.00e+00	2.296e+02	-0.3	10055
282	1.1388577e+03	2.1541864e+01	1.00e+00	1.231e+02	0.0	9944
283	1.1378666e+03	3.5243222e+00	1.00e+00	3.824e+01	0.0	9856
284	1.1373117e+03	3.5225023e+00	1.00e+00	3.820e+01	0.0	9781
285	1.1262150e+03	3.9933223e+01	1.00e+00	2.069e+02	0.0	9010
286	1.1375718e+03	1.0621410e+02	1.00e+00	5.213e+02	-0.3	9129
287	1.1233248e+03	1.5684870e+01	1.00e+00	9.383e+01	0.0	9619
288	1.1227107e+03	3.3611677e+00	1.00e+00	3.692e+01	0.0	9197
289	1.1221394e+03	3.3582280e+00	1.00e+00	3.688e+01	0.0	9061
290	1.1116026e+03	1.4070215e+02	1.00e+00	6.552e+02	0.0	7396
291	1.0909968e+03	3.4456515e+01	1.00e+00	1.728e+02	-0.3	8332
292	1.0867372e+03	3.1947350e+00	1.00e+00	3.544e+01	0.0	9516
293	1.0861831e+03	2.9014021e+00	1.00e+00	3.407e+01	0.0	8622
294	1.0843215e+03	6.7729226e+00	1.00e+00	4.931e+01	0.0	7822
295	1.0848225e+03	2.6083028e+01	1.00e+00	1.338e+02	-0.3	7848
296	1.0847780e+03	4.6510853e+01	1.00e+00	2.205e+02	0.0	8091
297	1.0669813e+03	1.3506049e+01	1.00e+00	7.140e+01	0.0	33707
298	1.0318127e+03	3.2011230e+01	1.00e+00	1.379e+02	0.0	34166
299	1.0506514e+03	2.4601488e+02	1.00e+00	9.667e+02	-0.3	18300
300	1.0001198e+03	4.6954079e+01	1.00e+00	1.813e+02	-0.3	19312
301	9.9747947e+02	3.9447139e+00	1.00e+00	3.016e+01	0.0	17691
302	9.9616632e+02	3.8649959e+00	1.00e+00	3.010e+01	0.0	16464

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303	9.9446004e+02	3.0948817e+01	1.00e+00	1.357e+02	0.0	8763
304	9.8473243e+02	1.0194473e+01	1.00e+00	5.384e+01	-0.3	11008
305	9.8309613e+02	5.2334102e+00	1.00e+00	3.718e+01	0.0	11319
306	9.8215904e+02	4.2253660e+00	1.00e+00	3.304e+01	0.0	10454
307	9.8071348e+02	1.5353393e+01	1.00e+00	6.992e+01	0.0	9424
308	9.8198342e+02	5.0781914e+01	1.00e+00	1.892e+02	-0.3	8940
309	9.8023495e+02	3.7527501e+01	1.00e+00	1.452e+02	0.0	8991
310	9.7896048e+02	3.2063437e+00	1.00e+00	2.875e+01	0.0	8845
311	9.7875004e+02	3.2014935e+00	1.00e+00	2.873e+01	0.0	8743
312	9.7584600e+02	4.8487500e+00	1.00e+00	3.322e+01	0.0	8126
313	9.7682989e+02	4.4360290e+01	1.00e+00	1.677e+02	-0.3	8145
314	9.7411525e+02	6.3274885e+00	1.00e+00	3.996e+01	-0.3	8803
315	9.7366696e+02	3.8655738e+00	1.00e+00	3.126e+01	0.0	8570
316	9.7313510e+02	3.0656072e+00	1.00e+00	2.819e+01	0.0	8299
317	9.7127089e+02	1.0016233e+01	1.00e+00	5.048e+01	0.0	7843
318	9.7120331e+02	3.3458467e+01	1.00e+00	1.288e+02	-0.3	7881
319	9.7205703e+02	5.6680404e+01	1.00e+00	2.055e+02	0.0	7903
320	9.7002420e+02	9.9572512e+00	1.00e+00	5.076e+01	0.0	7911
321	9.6981878e+02	3.0966511e+00	1.00e+00	2.803e+01	0.0	7847
322	9.6950963e+02	3.1000261e+00	1.00e+00	2.803e+01	0.0	7780
323	9.5586606e+02	1.0121540e+02	1.00e+00	3.414e+02	0.0	6714
324	9.5217434e+02	6.6291681e+01	1.00e+00	2.294e+02	-0.3	7547
325	9.4868828e+02	1.2486909e+01	1.00e+00	5.713e+01	0.0	8568
326	9.4829500e+02	3.7973203e+00	1.00e+00	2.978e+01	0.0	7833
327	9.4755108e+02	4.5169781e+00	1.00e+00	3.215e+01	0.0	7270
328	9.4685306e+02	2.4574183e+01	1.00e+00	9.539e+01	0.0	6872
329	9.4638715e+02	8.7428816e+00	1.00e+00	4.539e+01	-0.3	6948
330	9.4617380e+02	3.0967709e+00	1.00e+00	2.767e+01	0.0	6907
331	9.4595725e+02	3.2351486e+00	1.00e+00	2.806e+01	0.0	6855
332	9.4484590e+02	4.7211940e+01	1.00e+00	1.660e+02	0.0	6690
333	9.4426452e+02	2.2609009e+01	1.00e+00	8.844e+01	-0.3	6768
334	9.4391060e+02	4.4003840e+00	1.00e+00	3.163e+01	0.0	6736
335	9.4380758e+02	3.0501864e+00	1.00e+00	2.739e+01	0.0	6715
336	9.4282821e+02	3.7430559e+00	1.00e+00	2.958e+01	0.0	6646
337	9.4339554e+02	6.2661941e+01	1.00e+00	2.130e+02	-0.3	6663
338	9.4050454e+02	3.7623794e+00	1.00e+00	2.931e+01	-0.3	7073
339	9.4019251e+02	3.8336732e+00	1.00e+00	2.955e+01	0.0	7006
340	9.3973352e+02	2.9794719e+00	1.00e+00	2.704e+01	0.0	6834
341	9.3902114e+02	1.6787132e+01	1.00e+00	6.978e+01	0.0	6629
342	9.3879248e+02	1.5875424e+01	1.00e+00	6.684e+01	-0.3	6750
343	9.3848090e+02	6.3022716e+00	1.00e+00	3.730e+01	0.0	6685
344	9.3836876e+02	2.9738993e+00	1.00e+00	2.697e+01	0.0	6657
345	9.3808961e+02	2.9645487e+00	1.00e+00	2.694e+01	0.0	6615
346	9.2966340e+02	1.0486408e+02	1.00e+00	3.353e+02	0.0	6006
347	9.2674400e+02	7.6696449e+01	1.00e+00	2.506e+02	-0.3	6754
348	9.2229549e+02	1.0415285e+01	1.00e+00	4.899e+01	0.0	8150
349	9.2203218e+02	3.5172615e+00	1.00e+00	2.847e+01	0.0	7222
350	9.2160479e+02	3.0082707e+00	1.00e+00	2.675e+01	0.0	6643
351	9.2077625e+02	1.8770615e+01	1.00e+00	7.311e+01	0.0	6210
352	9.2075731e+02	2.5596432e+01	1.00e+00	9.380e+01	-0.3	6319
353	9.0433060e+02	2.2138559e+01	1.00e+00	7.328e+01	0.0	33706
354	8.5036650e+02	1.2936111e+02	1.00e+00	3.280e+02	0.0	34225
355	8.3859074e+02	7.2963970e+01	1.00e+00	1.816e+02	-0.3	34206
356	8.2833583e+02	6.6724461e+00	1.00e+00	2.804e+01	0.0	34228

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357	8.0774810e+02	2.1426816e+01	1.00e+00	5.847e+01	0.0	32089
358	8.1981842e+02	3.7583211e+02	1.00e+00	8.494e+02	-0.3	16292
359	7.8363139e+02	5.1140647e+01	1.00e+00	1.164e+02	-0.3	17639
360	7.8150651e+02	4.5002700e+00	1.00e+00	2.148e+01	0.0	17315
361	7.8060536e+02	3.9379920e+00	1.00e+00	2.024e+01	0.0	16425
362	7.7245107e+02	4.7178120e+01	1.00e+00	1.049e+02	0.0	10845
363	7.7527871e+02	8.1281068e+01	1.00e+00	1.745e+02	-0.3	12131
364	7.6961230e+02	2.9497687e+01	1.00e+00	6.990e+01	0.0	12050
365	7.6897024e+02	3.8182375e+00	1.00e+00	1.983e+01	0.0	11468
366	7.6867960e+02	3.7018628e+00	1.00e+00	1.961e+01	0.0	11110
367	7.6677709e+02	5.8200428e+01	1.00e+00	1.260e+02	0.0	9045
368	7.6650819e+02	6.5535923e+01	1.00e+00	1.393e+02	-0.3	10165
369	7.6385025e+02	1.2221566e+01	1.00e+00	3.595e+01	0.0	10289
370	7.6361283e+02	5.0681855e+00	1.00e+00	2.221e+01	0.0	9807
371	7.6325641e+02	4.2498215e+00	1.00e+00	2.063e+01	0.0	9449
372	7.6271332e+02	5.9279434e+01	1.00e+00	1.265e+02	0.0	8192
373	7.6128534e+02	3.5915860e+01	1.00e+00	8.137e+01	-0.3	9170
374	7.5993742e+02	9.3296989e+00	1.00e+00	3.043e+01	0.0	9129
375	7.5971333e+02	4.9115225e+00	1.00e+00	2.201e+01	0.0	8804
376	7.5911175e+02	7.4212833e+00	1.00e+00	2.680e+01	0.0	8379
377	7.5915032e+02	5.2884160e+01	1.00e+00	1.129e+02	0.0	7956
378	7.5816735e+02	9.1838735e+00	1.00e+00	3.007e+01	-0.3	8108
379	7.5790751e+02	3.7127349e+00	1.00e+00	1.964e+01	0.0	8037
380	7.5766412e+02	3.6785229e+00	1.00e+00	1.962e+01	0.0	7921
381	7.5643325e+02	1.7074671e+01	1.00e+00	4.475e+01	0.0	7639
382	7.5670833e+02	3.8301077e+01	1.00e+00	8.532e+01	-0.3	7735
383	7.5628249e+02	3.0473966e+01	1.00e+00	7.006e+01	0.0	7760
384	7.5588176e+02	3.7313149e+00	1.00e+00	1.971e+01	0.0	7720
385	7.5580985e+02	3.7310874e+00	1.00e+00	1.971e+01	0.0	7669
386	7.5463008e+02	8.3243935e+00	1.00e+00	2.842e+01	0.0	7436
387	7.5515682e+02	6.4564756e+01	1.00e+00	1.340e+02	-0.3	7451
388	7.5385555e+02	7.4496366e+00	1.00e+00	2.677e+01	-0.3	7815
389	7.5365360e+02	3.8669206e+00	1.00e+00	1.995e+01	0.0	7673
390	7.5348812e+02	3.7550360e+00	1.00e+00	1.977e+01	0.0	7553
391	7.5287755e+02	1.5755550e+01	1.00e+00	4.222e+01	0.0	7340
392	7.5290011e+02	3.9452002e+01	1.00e+00	8.668e+01	-0.3	7382
393	7.3625713e+02	6.0207727e+01	1.00e+00	1.125e+02	0.0	33840
394	7.3101301e+02	3.9680031e+02	1.00e+00	6.904e+02	0.0	34211
395	7.2086571e+02	3.9923075e+02	1.00e+00	6.565e+02	-0.3	32194
396	6.7746449e+02	1.2939983e+01	1.00e+00	2.857e+01	0.0	31978
397	6.7589119e+02	5.0409160e+00	1.00e+00	1.680e+01	0.0	30344
398	6.6078309e+02	2.4098672e+01	1.00e+00	4.429e+01	0.0	15872
399	6.6221475e+02	6.6647622e+01	1.00e+00	1.004e+02	-0.3	16818
400	6.5946001e+02	3.3190242e+01	1.00e+00	5.584e+01	0.0	16690
401	6.5855905e+02	6.0712959e+00	1.00e+00	1.775e+01	0.0	15893
402	6.5815137e+02	4.6446235e+00	1.00e+00	1.585e+01	0.0	15438
403	6.5414011e+02	3.2060125e+01	1.00e+00	5.258e+01	0.0	12390
404	6.5607816e+02	1.2283601e+02	1.00e+00	1.781e+02	-0.3	12529
405	6.5394971e+02	6.9104320e+01	1.00e+00	1.026e+02	0.0	12536
406	6.5293809e+02	4.4918507e+00	1.00e+00	1.561e+01	0.0	12347
407	6.5276969e+02	4.5061823e+00	1.00e+00	1.560e+01	0.0	12188
408	6.4978681e+02	2.5385053e+01	1.00e+00	4.391e+01	0.0	10289
409	6.5276168e+02	1.1828825e+02	1.00e+00	1.686e+02	-0.3	10494
410	6.5015329e+02	6.8876737e+01	1.00e+00	1.020e+02	0.0	10928

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411	6.4892958e+02	4.4233189e+00	1.00e+00	1.551e+01	0.0	10577
412	6.4881063e+02	4.4038123e+00	1.00e+00	1.551e+01	0.0	10412
413	6.4744121e+02	1.3878665e+01	1.00e+00	2.823e+01	0.0	9551
414	6.4797188e+02	5.2642459e+01	1.00e+00	7.964e+01	-0.3	9755
415	6.4776526e+02	5.9022239e+01	1.00e+00	8.805e+01	0.0	9933
416	6.4671868e+02	7.6845992e+00	1.00e+00	1.990e+01	0.0	9740
417	6.4660780e+02	4.3726880e+00	1.00e+00	1.551e+01	0.0	9602
418	6.4633180e+02	4.3730766e+00	1.00e+00	1.552e+01	0.0	9387
419	6.4462338e+02	8.4339982e+01	1.00e+00	1.220e+02	0.0	7982
420	6.4536601e+02	1.0108741e+02	1.00e+00	1.438e+02	-0.3	8869
421	6.4042385e+02	1.2414118e+01	1.00e+00	2.635e+01	0.0	9795
422	6.4025440e+02	4.4053218e+00	1.00e+00	1.597e+01	0.0	8970
423	6.4002998e+02	5.8852493e+00	1.00e+00	1.779e+01	0.0	8527
424	6.3997088e+02	5.3327706e+01	1.00e+00	7.844e+01	0.0	7925
425	6.3934290e+02	3.5735602e+01	1.00e+00	5.586e+01	-0.3	8331
426	6.3865726e+02	6.9490997e+00	1.00e+00	1.874e+01	0.0	8324
427	6.3857196e+02	4.6669723e+00	1.00e+00	1.585e+01	0.0	8152
428	6.3825207e+02	4.4783047e+00	1.00e+00	1.588e+01	0.0	7925
429	6.3825246e+02	4.0384177e+01	1.00e+00	6.158e+01	0.0	7739
430	6.3771377e+02	2.6442212e+02	1.00e+00	3.333e+02	-0.3	34129
431	6.1188932e+02	1.9978458e+02	1.00e+00	2.358e+02	-0.3	34158
432	5.8802963e+02	1.7204964e+01	1.00e+00	2.579e+01	0.0	34171
433	5.8300681e+02	6.6619622e+00	1.00e+00	1.453e+01	0.0	34183
434	5.5610038e+02	3.8948689e+01	1.00e+00	4.477e+01	0.0	20278
435	5.7543215e+02	1.7121278e+02	1.00e+00	1.761e+02	-0.3	21389
436	5.5562652e+02	5.5533450e+01	1.00e+00	6.012e+01	0.0	23537
437	5.5325691e+02	5.9379614e+00	1.00e+00	1.266e+01	0.0	21479
438	5.5270240e+02	5.3987851e+00	1.00e+00	1.217e+01	0.0	20292
439	5.4769880e+02	3.8520272e+01	1.00e+00	4.318e+01	0.0	12845
440	5.4612228e+02	3.8391747e+01	1.00e+00	4.201e+01	-0.3	15504
441	5.4416645e+02	1.4431998e+01	1.00e+00	2.034e+01	0.0	15083
442	5.4380799e+02	5.5778672e+00	1.00e+00	1.233e+01	0.0	14189
443	5.4349852e+02	5.4582287e+00	1.00e+00	1.217e+01	0.0	13484
444	5.4131169e+02	6.0979360e+01	1.00e+00	6.174e+01	0.0	10651
445	5.4076972e+02	7.9486442e+01	1.00e+00	7.802e+01	-0.3	12115
446	5.3941353e+02	2.8826511e+01	1.00e+00	3.284e+01	0.0	11786
447	5.3919065e+02	6.8602132e+00	1.00e+00	1.343e+01	0.0	11276
448	5.3901576e+02	6.5929253e+00	1.00e+00	1.319e+01	0.0	10974
449	5.3841730e+02	6.9450203e+01	1.00e+00	6.858e+01	0.0	9927
450	5.3742515e+02	2.8001749e+01	1.00e+00	3.206e+01	-0.3	11057
451	5.3712686e+02	8.2127963e+00	1.00e+00	1.464e+01	0.0	10773
452	5.3698537e+02	5.4533727e+00	1.00e+00	1.221e+01	0.0	10490
453	5.3645819e+02	1.6671698e+01	1.00e+00	2.202e+01	0.0	9924
454	5.3630764e+02	2.3572766e+01	1.00e+00	2.804e+01	-0.3	9994
455	5.3618582e+02	3.1846074e+01	1.00e+00	3.527e+01	0.0	9815
456	5.3604269e+02	1.8902234e+01	1.00e+00	2.394e+01	0.0	9763
457	5.3593579e+02	8.3364115e+00	1.00e+00	1.473e+01	0.0	9716
458	5.3583604e+02	5.2217512e+00	1.00e+00	1.201e+01	0.0	9667
459	5.3535208e+02	2.1000770e+01	1.00e+00	2.578e+01	0.0	9493
460	5.3545382e+02	7.8048436e+01	1.00e+00	7.538e+01	-0.3	9509
461	5.3556856e+02	1.0460532e+02	1.00e+00	9.873e+01	0.0	9500
462	5.3490880e+02	8.0124411e+00	1.00e+00	1.444e+01	0.0	9468
463	5.3485438e+02	5.1607495e+00	1.00e+00	1.197e+01	0.0	9425
464	5.3453086e+02	5.1462362e+00	1.00e+00	1.196e+01	0.0	9326

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465	5.3257342e+02	1.0510871e+02	1.00e+00	9.923e+01	-0.3	9324
466	5.3108391e+02	3.1582334e+01	1.00e+00	3.503e+01	-0.3	10114
467	5.3072253e+02	9.1929426e+00	1.00e+00	1.580e+01	0.0	9987
468	5.3061890e+02	4.9991748e+00	1.00e+00	1.212e+01	0.0	9735
469	5.3023551e+02	1.0134296e+01	1.00e+00	1.613e+01	0.0	9310
470	5.3058789e+02	5.7002159e+01	1.00e+00	5.682e+01	-0.3	9124
471	5.3001175e+02	3.7938482e+01	1.00e+00	4.022e+01	-0.3	9549
472	5.2972902e+02	6.3558246e+00	1.00e+00	1.320e+01	0.0	9342
473	5.2966694e+02	5.1207422e+00	1.00e+00	1.212e+01	0.0	9226
474	5.2936139e+02	5.7872675e+00	1.00e+00	1.249e+01	0.0	8972
475	5.2969735e+02	6.2862921e+01	1.00e+00	6.192e+01	-0.3	8777
476	5.2877904e+02	1.3853714e+01	1.00e+00	1.970e+01	-0.3	9427
477	5.2861488e+02	6.0863010e+00	1.00e+00	1.303e+01	0.0	9279
478	5.2849320e+02	5.1339854e+00	1.00e+00	1.212e+01	0.0	9049
479	5.2814500e+02	1.1747796e+01	1.00e+00	1.748e+01	0.0	8706
480	5.2803895e+02	2.1502661e+01	1.00e+00	2.596e+01	-0.3	8749
481	5.2804524e+02	3.9357349e+01	1.00e+00	4.094e+01	0.0	8694
482	5.2108401e+02	2.8698455e+01	1.00e+00	2.923e+01	0.0	33255
483	4.9477573e+02	2.2023401e+02	1.00e+00	1.651e+02	0.0	34162
484	4.9758626e+02	3.7330258e+02	1.00e+00	2.734e+02	-0.3	34125
485	4.8119823e+02	3.6355174e+01	1.00e+00	3.051e+01	0.0	34171
486	4.7753065e+02	8.6382979e+00	1.00e+00	1.142e+01	0.0	34167
487	4.5526441e+02	5.0648210e+01	1.00e+00	3.631e+01	0.0	27201
488	4.6458783e+02	3.0422843e+02	1.00e+00	1.953e+02	-0.3	27385
489	4.5465927e+02	1.2351239e+02	1.00e+00	8.020e+01	0.0	27712
490	4.5226883e+02	8.1098468e+00	1.00e+00	1.001e+01	0.0	26274
491	4.5172192e+02	7.3575110e+00	1.00e+00	9.573e+00	0.0	25431
492	4.4470083e+02	7.9361062e+01	1.00e+00	5.341e+01	0.0	13507
493	4.4859692e+02	1.4996509e+02	1.00e+00	9.110e+01	-0.3	16370
494	4.4048707e+02	5.1016633e+01	1.00e+00	3.489e+01	0.0	21678
495	4.3942002e+02	7.3118288e+00	1.00e+00	9.508e+00	0.0	17290
496	4.3919016e+02	7.2578036e+00	1.00e+00	9.502e+00	0.0	15608
497	4.3785383e+02	5.2213926e+01	1.00e+00	3.361e+01	0.0	12564
498	4.3725086e+02	5.0927416e+01	1.00e+00	3.412e+01	-0.3	14311
499	4.3655660e+02	2.0754991e+01	1.00e+00	1.665e+01	0.0	13396
500	4.3639211e+02	7.3069130e+00	1.00e+00	9.318e+00	0.0	13000
501	4.3619407e+02	7.2125253e+00	1.00e+00	9.309e+00	0.0	12621
502	4.3482984e+02	8.9781489e+01	1.00e+00	5.537e+01	0.0	11483
503	4.3447035e+02	5.8022591e+01	1.00e+00	3.732e+01	-0.3	12128
504	4.3415695e+02	1.4895390e+01	1.00e+00	1.368e+01	0.0	11881
505	4.3407196e+02	6.9100010e+00	1.00e+00	9.245e+00	0.0	11755
506	4.3375986e+02	9.3023053e+00	1.00e+00	1.047e+01	0.0	11484
507	4.3332295e+02	1.5291181e+02	1.00e+00	8.941e+01	-0.3	10828
508	4.3247875e+02	5.7909772e+01	1.00e+00	3.725e+01	-0.3	11258
509	4.3222977e+02	7.5846454e+00	1.00e+00	9.672e+00	0.0	11127
510	4.3215796e+02	6.6960812e+00	1.00e+00	9.153e+00	0.0	11028
511	4.3147563e+02	3.4258314e+01	1.00e+00	2.369e+01	0.0	10600
512	4.3141761e+02	6.2862280e+01	1.00e+00	3.966e+01	-0.3	10907
513	4.3118611e+02	3.6918518e+01	1.00e+00	2.543e+01	0.0	10707
514	4.3107314e+02	6.7340744e+00	1.00e+00	9.097e+00	0.0	10662
515	4.3100844e+02	6.7316224e+00	1.00e+00	9.095e+00	0.0	10590
516	4.3019225e+02	6.9968308e+01	1.00e+00	4.337e+01	0.0	10259
517	4.3023446e+02	8.7060058e+01	1.00e+00	5.250e+01	-0.3	10358
518	4.2988829e+02	2.1452944e+01	1.00e+00	1.708e+01	0.0	10329

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519	4.2983218e+02	6.5593501e+00	1.00e+00	9.039e+00	0.0	10288
520	4.2971444e+02	6.5690857e+00	1.00e+00	9.032e+00	0.0	10230
521	4.2508444e+02	1.9842173e+02	1.00e+00	1.112e+02	0.0	9083
522	4.2478978e+02	1.9733136e+02	1.00e+00	1.096e+02	-0.3	9971
523	4.2308225e+02	2.2467253e+01	1.00e+00	1.764e+01	0.0	10408
524	4.2300023e+02	7.2151743e+00	1.00e+00	9.633e+00	0.0	9904
525	4.2288334e+02	6.4312754e+00	1.00e+00	9.146e+00	0.0	9543
526	4.2247340e+02	5.5984500e+01	1.00e+00	3.453e+01	0.0	9120
527	4.2297831e+02	1.1455262e+02	1.00e+00	6.569e+01	-0.3	9550
528	4.2214984e+02	2.9401487e+01	1.00e+00	2.097e+01	0.0	9460
529	4.2207195e+02	6.5684611e+00	1.00e+00	9.123e+00	0.0	9338
530	4.2202915e+02	6.5676298e+00	1.00e+00	9.120e+00	0.0	9243
531	4.2076935e+02	1.6232658e+02	1.00e+00	8.979e+01	0.0	8780
532	4.1984063e+02	5.5551230e+01	1.00e+00	3.441e+01	-0.3	9706
533	4.1949328e+02	1.8113679e+01	1.00e+00	1.510e+01	0.0	9637
534	4.1942218e+02	9.3357462e+00	1.00e+00	1.057e+01	0.0	9435
535	4.1917377e+02	1.5210492e+01	1.00e+00	1.345e+01	0.0	9085
536	4.1915508e+02	5.6087726e+01	1.00e+00	3.447e+01	-0.3	8941
537	4.0947923e+02	1.7694970e+02	1.00e+00	8.808e+01	0.0	33727
538	4.0964010e+02	4.7425236e+02	1.00e+00	2.325e+02	-0.3	34046
539	4.0077426e+02	3.9413993e+02	1.00e+00	1.820e+02	0.0	34056
540	3.9069371e+02	4.0413460e+01	1.00e+00	2.220e+01	0.0	34113
541	3.8779035e+02	9.5030161e+00	1.00e+00	8.471e+00	0.0	34135
542	3.6867270e+02	6.1196983e+01	1.00e+00	2.808e+01	0.0	28847
543	3.7439875e+02	3.8694460e+02	1.00e+00	1.562e+02	-0.3	29038
544	3.6825753e+02	1.7678039e+02	1.00e+00	7.249e+01	0.0	29133
545	3.6632755e+02	9.6221329e+00	1.00e+00	7.610e+00	0.0	27785
546	3.6588639e+02	8.4479607e+00	1.00e+00	7.181e+00	0.0	26855
547	3.5986312e+02	1.2243042e+02	1.00e+00	5.034e+01	0.0	14696
548	3.6381922e+02	2.7107191e+02	1.00e+00	1.040e+02	-0.3	17055
549	3.5813511e+02	8.0509300e+01	1.00e+00	3.380e+01	0.0	19881
550	3.5742171e+02	8.6369557e+00	1.00e+00	7.201e+00	0.0	17124
551	3.5726938e+02	8.5955726e+00	1.00e+00	7.195e+00	0.0	16017
552	3.5602245e+02	6.4822791e+01	1.00e+00	2.668e+01	0.0	12837
553	3.5664040e+02	1.1570287e+02	1.00e+00	4.648e+01	-0.3	14822
554	3.5505218e+02	4.1213786e+01	1.00e+00	1.859e+01	0.0	14605
555	3.5485415e+02	8.5414875e+00	1.00e+00	7.082e+00	0.0	13751
556	3.5475861e+02	8.5070322e+00	1.00e+00	7.082e+00	0.0	13197
557	3.5386416e+02	1.2161139e+02	1.00e+00	4.795e+01	0.0	11421
558	3.5384471e+02	1.4752678e+02	1.00e+00	5.616e+01	-0.3	12646
559	3.5265697e+02	2.8112533e+01	1.00e+00	1.416e+01	0.0	12772
560	3.5257068e+02	8.6747747e+00	1.00e+00	7.271e+00	0.0	12191
561	3.5245666e+02	8.0245970e+00	1.00e+00	7.012e+00	0.0	11859
562	3.5238398e+02	1.5788636e+02	1.00e+00	5.914e+01	0.0	10729
563	3.5177468e+02	1.1646878e+02	1.00e+00	4.529e+01	-0.3	12051
564	3.5087769e+02	1.8291289e+01	1.00e+00	1.048e+01	0.0	11883
565	3.5079567e+02	8.4853638e+00	1.00e+00	7.084e+00	0.0	11523
566	3.5049806e+02	9.2702264e+00	1.00e+00	7.459e+00	0.0	10986
567	3.5044854e+02	1.0859334e+02	1.00e+00	4.172e+01	0.0	10479
568	3.4998583e+02	3.1698310e+01	1.00e+00	1.519e+01	-0.3	11217
569	3.4987201e+02	1.1550213e+01	1.00e+00	8.153e+00	0.0	10929
570	3.4979090e+02	7.7500329e+00	1.00e+00	6.868e+00	0.0	10708
571	3.4952239e+02	1.3573637e+01	1.00e+00	8.944e+00	0.0	10374
572	3.4942131e+02	4.9895164e+01	1.00e+00	2.149e+01	-0.3	10467

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573	3.4938781e+02	7.0305898e+01	1.00e+00	2.849e+01	-0.3	10408
574	3.4927435e+02	3.5300622e+01	1.00e+00	1.644e+01	0.0	10343
575	3.4922872e+02	7.6124717e+00	1.00e+00	6.856e+00	0.0	10316
576	3.4918396e+02	7.6106969e+00	1.00e+00	6.858e+00	0.0	10286
577	3.4864624e+02	1.0241706e+02	1.00e+00	3.950e+01	0.0	10065
578	3.4855098e+02	7.4660679e+01	1.00e+00	2.999e+01	-0.3	10102
579	3.4843696e+02	1.2402621e+01	1.00e+00	8.517e+00	0.0	10079
580	3.4840804e+02	7.4872668e+00	1.00e+00	6.827e+00	0.0	10071
581	3.4811169e+02	1.1924739e+01	1.00e+00	8.348e+00	0.0	9989
582	3.4824326e+02	1.8470262e+02	1.00e+00	6.763e+01	-0.3	9997
583	3.4760620e+02	3.7783885e+01	1.00e+00	1.733e+01	-0.3	10295
584	3.4751640e+02	8.6432789e+00	1.00e+00	7.273e+00	0.0	10170
585	3.4747189e+02	7.4810001e+00	1.00e+00	6.856e+00	0.0	10095
586	3.4703387e+02	8.5054620e+01	1.00e+00	3.318e+01	0.0	9797
587	3.4714290e+02	1.1250079e+02	1.00e+00	4.252e+01	-0.3	10146
588	3.4675327e+02	2.2839560e+01	1.00e+00	1.206e+01	0.0	10065
589	3.4671498e+02	7.6911332e+00	1.00e+00	6.880e+00	0.0	9939
590	3.4666045e+02	7.6517518e+00	1.00e+00	6.880e+00	0.0	9853
591	3.4518538e+02	1.3081345e+02	1.00e+00	4.876e+01	0.0	9364
592	3.4519541e+02	1.5807031e+02	1.00e+00	5.794e+01	-0.3	10376
593	3.4197559e+02	2.8172792e+01	1.00e+00	1.318e+01	0.0	31886
594	3.3651076e+02	3.4688834e+01	1.00e+00	1.498e+01	0.0	33565
595	3.3013414e+02	6.0177116e+02	1.00e+00	1.864e+02	-0.3	19723
596	3.2252212e+02	9.6636104e+01	1.00e+00	3.175e+01	-0.3	20720
597	3.2198984e+02	8.1487641e+00	1.00e+00	5.887e+00	0.0	20060
598	3.2179073e+02	8.0654807e+00	1.00e+00	5.901e+00	0.0	19136
599	3.2074298e+02	1.2259875e+02	1.00e+00	3.998e+01	0.0	11623
600	3.2115313e+02	1.6956086e+02	1.00e+00	5.215e+01	-0.3	13703
601	3.1920367e+02	5.0295019e+01	1.00e+00	1.818e+01	0.0	15050
602	3.1901037e+02	8.5673417e+00	1.00e+00	6.181e+00	0.0	13197
603	3.1892555e+02	8.5704050e+00	1.00e+00	6.178e+00	0.0	12523
604	3.1897310e+02	1.0178950e+02	1.00e+00	3.217e+01	0.0	10751
605	3.1881156e+02	1.1003202e+02	1.00e+00	3.514e+01	-0.3	12354
606	3.1799929e+02	2.4207448e+01	1.00e+00	1.047e+01	0.0	12141
607	3.1792385e+02	1.0137609e+01	1.00e+00	6.515e+00	0.0	11602
608	3.1780518e+02	8.4710041e+00	1.00e+00	6.092e+00	0.0	11129
609	3.1760064e+02	1.2707258e+02	1.00e+00	3.990e+01	0.0	10183
610	3.1716752e+02	3.2913198e+01	1.00e+00	1.313e+01	-0.3	11045
611	3.1704784e+02	1.1619186e+01	1.00e+00	7.098e+00	0.0	10840
612	3.1697631e+02	8.8210123e+00	1.00e+00	6.270e+00	0.0	10578
613	3.1672862e+02	4.0147895e+01	1.00e+00	1.498e+01	0.0	10132
614	3.1665705e+02	3.5918981e+01	1.00e+00	1.378e+01	-0.3	10377
615	3.1659522e+02	3.2642258e+01	1.00e+00	1.294e+01	0.0	10174
616	3.1654989e+02	1.6759480e+01	1.00e+00	8.451e+00	0.0	10126
617	3.1649737e+02	2.6146077e+01	1.00e+00	1.111e+01	0.0	10044
618	3.1645869e+02	8.7035332e+01	1.00e+00	2.813e+01	0.0	9964
619	3.1639119e+02	6.4466079e+01	1.00e+00	2.187e+01	-0.3	9961
620	3.1632921e+02	9.6483245e+00	1.00e+00	6.472e+00	0.0	9933
621	3.1630369e+02	8.1031471e+00	1.00e+00	6.042e+00	0.0	9924
622	3.1607425e+02	1.6032561e+01	1.00e+00	8.256e+00	0.0	9827
623	3.1623950e+02	2.2024399e+02	1.00e+00	6.554e+01	-0.3	9831
624	3.1573703e+02	2.2823912e+01	1.00e+00	1.017e+01	-0.3	9885
625	3.1569499e+02	8.0097964e+00	1.00e+00	6.035e+00	0.0	9848
626	3.1565412e+02	8.0250016e+00	1.00e+00	6.034e+00	0.0	9806

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627	3.1408284e+02	1.9052124e+02	1.00e+00	5.644e+01	0.0	9359
628	3.1366424e+02	9.1026116e+01	1.00e+00	2.898e+01	-0.3	9645
629	3.1345263e+02	1.3558051e+01	1.00e+00	7.581e+00	0.0	9591
630	3.1342866e+02	8.3687568e+00	1.00e+00	6.152e+00	0.0	9524
631	3.1318279e+02	3.0101144e+01	1.00e+00	1.211e+01	0.0	9370
632	3.1318152e+02	8.3670220e+01	1.00e+00	2.686e+01	-0.3	9549
633	3.0816611e+02	1.5577536e+02	1.00e+00	4.371e+01	0.0	33207
634	3.1223503e+02	9.9309176e+02	1.00e+00	2.710e+02	0.0	34006
635	2.9771201e+02	6.3621142e+02	1.00e+00	1.565e+02	-0.3	34059
636	2.9017594e+02	3.0889096e+01	1.00e+00	1.020e+01	0.0	34101
637	2.8846551e+02	1.1500381e+01	1.00e+00	5.580e+00	0.0	34110
638	2.7796812e+02	1.3707127e+02	1.00e+00	3.288e+01	0.0	18714
639	2.7722383e+02	1.5421976e+02	1.00e+00	3.454e+01	-0.3	21213
640	2.7493807e+02	3.0847331e+01	1.00e+00	9.296e+00	0.0	21441
641	2.7473764e+02	1.0307217e+01	1.00e+00	4.901e+00	0.0	20006
642	2.7451726e+02	1.0609408e+01	1.00e+00	4.956e+00	0.0	19151
643	2.7384342e+02	1.8286846e+02	1.00e+00	3.993e+01	0.0	13449
644	2.7170758e+02	7.3237429e+01	1.00e+00	1.794e+01	-0.3	15567
645	2.7126553e+02	1.5450461e+01	1.00e+00	5.938e+00	0.0	15102
646	2.7114991e+02	1.4472938e+01	1.00e+00	5.750e+00	0.0	14559
647	2.7085901e+02	4.1191838e+01	1.00e+00	1.121e+01	0.0	13149
648	2.7059943e+02	1.6936423e+01	1.00e+00	6.192e+00	-0.3	14338
649	2.7050275e+02	1.1471365e+01	1.00e+00	5.162e+00	0.0	13704
650	2.7040679e+02	1.0926550e+01	1.00e+00	5.016e+00	0.0	13276
651	2.7018091e+02	2.9962257e+01	1.00e+00	8.957e+00	0.0	12657
652	2.7010416e+02	2.2582613e+01	1.00e+00	7.334e+00	-0.3	12861
653	2.7003753e+02	1.6481223e+01	1.00e+00	6.186e+00	0.0	12654
654	2.6997688e+02	1.0727447e+01	1.00e+00	4.990e+00	0.0	12598
655	2.6985883e+02	2.1178453e+01	1.00e+00	7.125e+00	0.0	12397
656	2.6989538e+02	8.8121209e+01	1.00e+00	2.036e+01	-0.3	12292
657	2.6967474e+02	3.0947693e+01	1.00e+00	9.073e+00	-0.3	12340
658	2.6961402e+02	1.0580846e+01	1.00e+00	4.975e+00	0.0	12269
659	2.6957051e+02	1.0539795e+01	1.00e+00	4.972e+00	0.0	12186
660	2.6881693e+02	2.8947618e+01	1.00e+00	8.644e+00	0.0	11612
661	2.6932950e+02	1.9456302e+02	1.00e+00	4.167e+01	-0.3	11684
662	2.6864758e+02	5.6939270e+01	1.00e+00	1.417e+01	-0.3	11985
663	2.6854854e+02	1.0229435e+01	1.00e+00	4.932e+00	0.0	11808
664	2.6851550e+02	1.0212389e+01	1.00e+00	4.929e+00	0.0	11710
665	2.6798116e+02	8.3451318e+01	1.00e+00	1.942e+01	0.0	11189
666	2.6789397e+02	8.2634898e+01	1.00e+00	1.920e+01	-0.3	11629
667	2.6774581e+02	3.4215845e+01	1.00e+00	9.668e+00	0.0	11423
668	2.6771118e+02	9.9731724e+00	1.00e+00	4.897e+00	0.0	11321
669	2.6765503e+02	9.9676413e+00	1.00e+00	4.896e+00	0.0	11232
670	2.6686565e+02	3.1933536e+02	1.00e+00	6.538e+01	0.0	10538
671	2.6620781e+02	1.0491051e+02	1.00e+00	2.344e+01	-0.3	10888
672	2.6608462e+02	1.3439982e+01	1.00e+00	5.625e+00	0.0	10789
673	2.6605587e+02	9.4908446e+00	1.00e+00	4.849e+00	0.0	10723
674	2.6581668e+02	6.3427374e+01	1.00e+00	1.524e+01	0.0	10498
675	2.6583851e+02	9.9556091e+01	1.00e+00	2.226e+01	-0.3	10998
676	2.6567876e+02	5.6006603e+01	1.00e+00	1.385e+01	0.0	10826
677	2.6562695e+02	9.4860657e+00	1.00e+00	4.827e+00	0.0	10705
678	2.6560062e+02	9.4687872e+00	1.00e+00	4.826e+00	0.0	10609
679	2.6521641e+02	7.9828876e+01	1.00e+00	1.840e+01	0.0	10324
680	2.6525935e+02	1.1938138e+02	1.00e+00	2.612e+01	-0.3	10426

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681	2.6509460e+02	4.0196240e+01	1.00e+00	1.075e+01	0.0	10409
682	2.6506390e+02	9.3677925e+00	1.00e+00	4.816e+00	0.0	10373
683	2.6503222e+02	9.3685443e+00	1.00e+00	4.814e+00	0.0	10325
684	2.6438496e+02	4.7052482e+02	1.00e+00	9.348e+01	0.0	9840
685	2.6362926e+02	2.7032604e+02	1.00e+00	5.454e+01	-0.3	10594
686	2.6299612e+02	2.2375807e+01	1.00e+00	7.301e+00	0.0	10561
687	2.6297000e+02	1.0813894e+01	1.00e+00	5.101e+00	0.0	10351
688	2.6280740e+02	2.2778132e+01	1.00e+00	7.366e+00	0.0	10035
689	2.6275238e+02	4.1763109e+01	1.00e+00	1.101e+01	-0.3	10161
690	2.6275112e+02	7.9773350e+01	1.00e+00	1.811e+01	0.0	10023
691	2.6009454e+02	6.4673099e+01	1.00e+00	1.450e+01	0.0	32124
692	2.5106653e+02	5.3015043e+02	1.00e+00	9.266e+01	0.0	33956
693	2.4712975e+02	2.3505358e+02	1.00e+00	4.090e+01	-0.3	33946
694	2.4526864e+02	3.5008168e+01	1.00e+00	8.080e+00	0.0	34000
695	2.4268024e+02	4.4188614e+01	1.00e+00	9.310e+00	0.0	34035
696	2.4415116e+02	1.3232629e+03	1.00e+00	2.148e+02	0.0	23104
697	2.2822340e+02	3.1096256e+02	1.00e+00	4.567e+01	-0.3	25515
698	2.2717477e+02	1.7128153e+01	1.00e+00	4.386e+00	0.0	25466
699	2.2698056e+02	1.4057252e+01	1.00e+00	3.986e+00	0.0	24538
700	2.2538163e+02	8.6889199e+01	1.00e+00	1.340e+01	0.0	17915
701	2.2464092e+02	5.4542701e+01	1.00e+00	9.688e+00	-0.3	20842
702	2.2410353e+02	2.6526238e+01	1.00e+00	5.543e+00	0.0	19590
703	2.2398785e+02	1.3245225e+01	1.00e+00	3.810e+00	0.0	18834
704	2.2374114e+02	1.4175717e+01	1.00e+00	3.971e+00	0.0	17796
705	2.2277638e+02	1.4742913e+02	1.00e+00	2.172e+01	0.0	14891
706	2.2292963e+02	2.0903389e+02	1.00e+00	3.006e+01	-0.3	16812
707	2.2193245e+02	4.8155100e+01	1.00e+00	8.482e+00	0.0	16551
708	2.2184107e+02	1.3017752e+01	1.00e+00	3.829e+00	0.0	15701
709	2.2176222e+02	1.3022313e+01	1.00e+00	3.829e+00	0.0	15158
710	2.2130921e+02	2.5562547e+02	1.00e+00	3.590e+01	0.0	13142
711	2.2044894e+02	1.3056314e+02	1.00e+00	1.931e+01	-0.3	14450
712	2.2015973e+02	2.4853344e+01	1.00e+00	5.417e+00	0.0	14208
713	2.2011149e+02	1.4090561e+01	1.00e+00	4.012e+00	0.0	13927
714	2.1984933e+02	3.7353883e+01	1.00e+00	6.983e+00	0.0	13178
715	2.1976639e+02	4.3248040e+01	1.00e+00	7.765e+00	-0.3	13496
716	2.1969946e+02	3.8812260e+01	1.00e+00	7.224e+00	0.0	13157
717	2.1964728e+02	3.4069625e+01	1.00e+00	6.572e+00	0.0	13064
718	2.1959406e+02	3.4606459e+01	1.00e+00	6.671e+00	0.0	12951
719	2.1953908e+02	6.7021458e+01	1.00e+00	1.083e+01	0.0	12875
720	2.1951098e+02	1.1684024e+02	1.00e+00	1.734e+01	0.0	12817
721	2.1944568e+02	9.4880084e+01	1.00e+00	1.443e+01	0.0	12801
722	2.1938461e+02	2.0920593e+01	1.00e+00	4.886e+00	0.0	12739
723	2.1935513e+02	1.2754586e+01	1.00e+00	3.826e+00	0.0	12702
724	2.1916436e+02	3.5140444e+01	1.00e+00	6.718e+00	0.0	12521
725	2.1910400e+02	2.3080883e+02	1.00e+00	3.198e+01	-0.3	12528
726	2.1895949e+02	3.2755361e+01	1.00e+00	6.420e+00	-0.3	12586
727	2.1892262e+02	1.2613998e+01	1.00e+00	3.819e+00	0.0	12533
728	2.1885258e+02	1.3075799e+01	1.00e+00	3.874e+00	0.0	12435
729	2.1865029e+02	8.2099341e+02	1.00e+00	1.078e+02	0.0	11428
730	2.1727011e+02	2.9316811e+02	1.00e+00	3.957e+01	-0.3	12492
731	2.1692894e+02	3.5613837e+01	1.00e+00	6.801e+00	0.0	12256
732	2.1689460e+02	1.9848875e+01	1.00e+00	4.795e+00	0.0	12011
733	2.1674310e+02	6.0559530e+01	1.00e+00	9.798e+00	0.0	11491
734	2.1665329e+02	3.4296706e+01	1.00e+00	6.560e+00	-0.3	12075

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735	2.1660852e+02	2.7059565e+01	1.00e+00	5.656e+00	0.0	11692
736	2.1657379e+02	1.5368982e+01	1.00e+00	4.188e+00	0.0	11547
737	2.1651926e+02	3.6751520e+01	1.00e+00	6.892e+00	0.0	11412
738	2.1649487e+02	7.7330080e+01	1.00e+00	1.200e+01	-0.3	11370
739	2.1647227e+02	1.0133558e+02	1.00e+00	1.503e+01	0.0	11355
740	2.1639886e+02	2.1944367e+01	1.00e+00	5.024e+00	0.0	11360
741	2.1637557e+02	1.1915771e+01	1.00e+00	3.760e+00	0.0	11332
742	2.1633609e+02	1.1906610e+01	1.00e+00	3.759e+00	0.0	11293
743	2.1497509e+02	2.0798120e+02	1.00e+00	2.818e+01	0.0	10792
744	2.1538599e+02	3.9208222e+02	1.00e+00	5.120e+01	-0.3	10977
745	2.1478395e+02	5.0079167e+01	1.00e+00	8.497e+00	0.0	11059
746	2.1476114e+02	1.1686411e+01	1.00e+00	3.743e+00	0.0	10947
747	2.1473152e+02	1.1672010e+01	1.00e+00	3.742e+00	0.0	10865
748	2.1375728e+02	3.0909064e+02	1.00e+00	4.019e+01	0.0	10490
749	2.1366476e+02	2.8029652e+02	1.00e+00	3.671e+01	-0.3	11090
750	2.1328457e+02	2.8384966e+01	1.00e+00	5.768e+00	0.0	10998
751	2.1326314e+02	1.3536700e+01	1.00e+00	3.955e+00	0.0	10820
752	2.1316515e+02	1.1197410e+01	1.00e+00	3.689e+00	0.0	10628
753	2.1291467e+02	1.7624511e+02	1.00e+00	2.374e+01	0.0	10410
754	2.1270055e+02	6.8460690e+01	1.00e+00	1.064e+01	-0.3	11067
755	2.1263255e+02	2.0849440e+01	1.00e+00	4.833e+00	0.0	10853
756	2.1260713e+02	1.1424269e+01	1.00e+00	3.694e+00	0.0	10728
757	2.1251384e+02	1.5372846e+01	1.00e+00	4.201e+00	0.0	10500
758	2.1250213e+02	9.7254102e+01	1.00e+00	1.406e+01	-0.3	10418
759	2.1237839e+02	2.5569245e+01	1.00e+00	5.428e+00	-0.3	10828
760	2.1234408e+02	1.1408656e+01	1.00e+00	3.696e+00	0.0	10656
761	2.1230761e+02	1.1326017e+01	1.00e+00	3.694e+00	0.0	10514
762	2.1220293e+02	7.6644842e+01	1.00e+00	1.159e+01	0.0	10363
763	2.1221359e+02	1.3308638e+02	1.00e+00	1.846e+01	-0.3	10413
764	2.1214048e+02	5.2713873e+01	1.00e+00	8.696e+00	0.0	10375
765	2.1211997e+02	1.1282714e+01	1.00e+00	3.692e+00	0.0	10370
766	2.1210132e+02	1.1302186e+01	1.00e+00	3.692e+00	0.0	10354
767	2.1142297e+02	3.2678955e+02	1.00e+00	4.164e+01	0.0	10163
768	2.1156819e+02	3.9289636e+02	1.00e+00	4.957e+01	-0.3	10239
769	2.1111559e+02	2.0129288e+01	1.00e+00	4.749e+00	0.0	10248
770	2.1110316e+02	1.1507285e+01	1.00e+00	3.714e+00	0.0	10208
771	2.1097512e+02	4.9043748e+01	1.00e+00	8.207e+00	0.0	10158
772	2.1097794e+02	1.6953763e+02	1.00e+00	2.261e+01	-0.3	10184
773	2.0783351e+02	3.6894076e+02	1.00e+00	4.433e+01	0.0	32782
774	2.0615627e+02	1.0425493e+03	1.00e+00	1.204e+02	-0.3	33627
775	2.0766293e+02	1.6844667e+03	1.00e+00	1.943e+02	0.0	33816
776	2.0008554e+02	3.1652933e+02	1.00e+00	3.577e+01	0.0	33860
777	1.9888076e+02	1.9173768e+01	1.00e+00	3.903e+00	0.0	33931
778	1.9619562e+02	4.9641196e+01	1.00e+00	6.927e+00	0.0	34007
779	1.9567820e+02	1.4831628e+03	1.00e+00	1.530e+02	-0.3	17630
780	1.9393014e+02	1.1288709e+03	1.00e+00	1.145e+02	-0.3	19609
781	1.9149609e+02	4.4367620e+01	1.00e+00	6.108e+00	0.0	19083
782	1.9143784e+02	1.3983349e+01	1.00e+00	3.148e+00	0.0	18360
783	1.9104530e+02	2.5510171e+01	1.00e+00	4.268e+00	0.0	16225
784	1.9128314e+02	1.5501003e+02	1.00e+00	1.698e+01	-0.3	16306
785	1.9087999e+02	8.0803048e+01	1.00e+00	9.568e+00	-0.3	17273
786	1.9074039e+02	2.1104903e+01	1.00e+00	3.845e+00	0.0	16463
787	1.9069313e+02	1.4087037e+01	1.00e+00	3.160e+00	0.0	16032
788	1.9042258e+02	1.8936046e+01	1.00e+00	3.658e+00	0.0	14713

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789	1.9053737e+02	1.3150989e+02	1.00e+00	1.446e+01	-0.3	14737
790	1.9046548e+02	1.6507276e+02	1.00e+00	1.778e+01	-0.3	15752
791	1.9013681e+02	3.9288598e+01	1.00e+00	5.582e+00	0.0	15140
792	1.9009683e+02	1.4063319e+01	1.00e+00	3.167e+00	0.0	14659
793	1.9002914e+02	1.4009577e+01	1.00e+00	3.168e+00	0.0	14200
794	1.8967207e+02	5.2799807e+02	1.00e+00	5.262e+01	0.0	11717
795	1.8935113e+02	4.6579308e+02	1.00e+00	4.631e+01	-0.3	12858
796	1.8870138e+02	3.9408255e+01	1.00e+00	5.664e+00	0.0	12657
797	1.8867409e+02	1.6289921e+01	1.00e+00	3.466e+00	0.0	12332
798	1.8860068e+02	1.3407522e+01	1.00e+00	3.168e+00	0.0	11951
799	1.8849139e+02	2.5341507e+02	1.00e+00	2.582e+01	0.0	11343
800	1.8821849e+02	9.6536647e+01	1.00e+00	1.104e+01	-0.3	11806
801	1.8813838e+02	1.6111457e+01	1.00e+00	3.427e+00	0.0	11629
802	1.8811887e+02	1.3358136e+01	1.00e+00	3.168e+00	0.0	11532
803	1.8798344e+02	4.0931110e+01	1.00e+00	5.741e+00	0.0	11267
804	1.8797163e+02	7.9454419e+01	1.00e+00	9.388e+00	-0.3	11431
805	1.8794473e+02	9.1030197e+01	1.00e+00	1.047e+01	0.0	11389
806	1.8787714e+02	1.9172060e+01	1.00e+00	3.714e+00	0.0	11340
807	1.8785953e+02	1.3280395e+01	1.00e+00	3.160e+00	0.0	11284
808	1.8781223e+02	1.3268849e+01	1.00e+00	3.160e+00	0.0	11201
809	1.8748818e+02	5.3970616e+02	1.00e+00	5.255e+01	0.0	10304
810	1.8527778e+02	1.1951792e+02	1.00e+00	1.303e+01	-0.3	11420
811	1.8507443e+02	1.9493762e+01	1.00e+00	3.840e+00	0.0	11527
812	1.8503370e+02	1.6301864e+01	1.00e+00	3.537e+00	0.0	11246
813	1.8491449e+02	5.7392712e+01	1.00e+00	7.161e+00	0.0	10680
814	1.8484606e+02	3.0820514e+01	1.00e+00	4.787e+00	-0.3	11205
815	1.8481384e+02	2.7650530e+01	1.00e+00	4.512e+00	0.0	10829
816	1.8478615e+02	1.8635447e+01	1.00e+00	3.697e+00	0.0	10652
817	1.8474538e+02	5.2323828e+01	1.00e+00	6.764e+00	0.0	10495
818	1.8473886e+02	9.6354817e+01	1.00e+00	1.076e+01	-0.3	10465
819	1.8295150e+02	7.9461083e+01	1.00e+00	8.735e+00	0.0	31352
820	1.7757950e+02	7.1849725e+02	1.00e+00	6.145e+01	0.0	33790
821	1.7413539e+02	2.5518977e+02	1.00e+00	2.165e+01	-0.3	33832
822	1.7298122e+02	4.0096946e+01	1.00e+00	4.739e+00	0.0	33859
823	1.7136040e+02	4.2555920e+01	1.00e+00	4.769e+00	0.0	33936
824	1.7029072e+02	1.5027036e+03	1.00e+00	1.164e+02	0.0	24767
825	1.6524806e+02	1.3351632e+03	1.00e+00	9.593e+01	-0.3	26940
826	1.5799554e+02	6.0375841e+01	1.00e+00	5.171e+00	0.0	30045
827	1.5783531e+02	2.2692099e+01	1.00e+00	2.710e+00	0.0	26973
828	1.5724037e+02	2.9434890e+01	1.00e+00	3.153e+00	0.0	24076
829	1.5713472e+02	1.8142521e+02	1.00e+00	1.286e+01	-0.3	24061
830	1.5667519e+02	5.3655983e+01	1.00e+00	4.711e+00	-0.3	25037
831	1.5656164e+02	2.1916566e+01	1.00e+00	2.654e+00	0.0	24008
832	1.5631947e+02	2.6367291e+01	1.00e+00	2.940e+00	0.0	22738
833	1.5624934e+02	2.8646027e+02	1.00e+00	1.943e+01	-0.3	19848
834	1.5544151e+02	8.2368580e+01	1.00e+00	6.496e+00	-0.3	21403
835	1.5531452e+02	2.0467584e+01	1.00e+00	2.548e+00	0.0	20746
836	1.5521510e+02	1.9448136e+01	1.00e+00	2.488e+00	0.0	20010
837	1.5437111e+02	1.5150468e+02	1.00e+00	1.073e+01	0.0	16750
838	1.5488316e+02	3.0781491e+02	1.00e+00	2.068e+01	-0.3	18023
839	1.5402507e+02	7.3813530e+01	1.00e+00	5.864e+00	0.0	18135
840	1.5395213e+02	2.0342501e+01	1.00e+00	2.562e+00	0.0	17395
841	1.5390165e+02	1.7806685e+01	1.00e+00	2.402e+00	0.0	16937
842	1.5315233e+02	4.4611426e+02	1.00e+00	2.883e+01	0.0	14076

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843	1.5301101e+02	4.4188481e+02	1.00e+00	2.840e+01	-0.3	15826
844	1.5225779e+02	6.9417781e+01	1.00e+00	5.575e+00	0.0	15889
845	1.5221209e+02	1.8137378e+01	1.00e+00	2.460e+00	0.0	15159
846	1.5213590e+02	2.0760478e+01	1.00e+00	2.611e+00	0.0	14616
847	1.5195306e+02	1.8940384e+02	1.00e+00	1.281e+01	-0.3	13755
848	1.5209628e+02	3.3308820e+02	1.00e+00	2.156e+01	-0.3	14407
849	1.5173786e+02	5.8386359e+01	1.00e+00	4.876e+00	0.0	14319
850	1.5170751e+02	1.7974718e+01	1.00e+00	2.451e+00	0.0	14033
851	1.5166992e+02	1.8012790e+01	1.00e+00	2.449e+00	0.0	13810
852	1.5084276e+02	3.4524104e+02	1.00e+00	2.216e+01	0.0	12404
853	1.5050577e+02	2.5628556e+02	1.00e+00	1.659e+01	-0.3	13866
854	1.5019865e+02	4.4126613e+01	1.00e+00	4.033e+00	0.0	13617
855	1.5016794e+02	1.8217306e+01	1.00e+00	2.498e+00	0.0	13265
856	1.5010066e+02	2.1599997e+01	1.00e+00	2.682e+00	0.0	12849
857	1.5003688e+02	3.4185909e+02	1.00e+00	2.151e+01	0.0	12221
858	1.4974491e+02	1.1998179e+02	1.00e+00	8.489e+00	-0.3	12952
859	1.4967831e+02	2.1139669e+01	1.00e+00	2.661e+00	0.0	12711
860	1.4965484e+02	1.8292194e+01	1.00e+00	2.494e+00	0.0	12540
861	1.4951443e+02	7.0318087e+01	1.00e+00	5.496e+00	0.0	12160
862	1.4954193e+02	1.5052348e+02	1.00e+00	1.026e+01	-0.3	12607
863	1.4943859e+02	6.4911394e+01	1.00e+00	5.201e+00	0.0	12452
864	1.4940629e+02	1.6977390e+01	1.00e+00	2.410e+00	0.0	12297
865	1.4938960e+02	1.6983181e+01	1.00e+00	2.410e+00	0.0	12189
866	1.4910261e+02	1.1841795e+02	1.00e+00	8.324e+00	0.0	11899
867	1.4920579e+02	2.8609063e+02	1.00e+00	1.808e+01	-0.3	12040
868	1.4903181e+02	8.4321419e+01	1.00e+00	6.326e+00	0.0	12048
869	1.4900869e+02	1.6914068e+01	1.00e+00	2.410e+00	0.0	11964
870	1.4899327e+02	1.6913879e+01	1.00e+00	2.410e+00	0.0	11926
871	1.4840595e+02	9.2329537e+02	1.00e+00	5.461e+01	0.0	11308
872	1.4772350e+02	4.8859610e+02	1.00e+00	2.940e+01	-0.3	11944
873	1.4740643e+02	3.5353447e+01	1.00e+00	3.478e+00	0.0	11778
874	1.4739235e+02	1.8198476e+01	1.00e+00	2.501e+00	0.0	11658
875	1.4730158e+02	4.9717157e+01	1.00e+00	4.277e+00	0.0	11389
876	1.4727246e+02	5.7161268e+01	1.00e+00	4.684e+00	-0.3	11607
877	1.4724798e+02	4.6111682e+01	1.00e+00	4.085e+00	0.0	11433
878	1.4722816e+02	3.2736169e+01	1.00e+00	3.310e+00	0.0	11412
879	1.4720530e+02	3.6773698e+01	1.00e+00	3.553e+00	0.0	11343
880	1.4718300e+02	1.2711662e+02	1.00e+00	8.638e+00	0.0	11323
881	1.4715913e+02	9.0971475e+01	1.00e+00	6.632e+00	-0.3	11342
882	1.4713145e+02	2.8089143e+01	1.00e+00	3.048e+00	0.0	11316
883	1.4711926e+02	1.6300634e+01	1.00e+00	2.384e+00	0.0	11294
884	1.4707782e+02	1.8457639e+01	1.00e+00	2.503e+00	0.0	11262
885	1.4695988e+02	2.8378597e+02	1.00e+00	1.756e+01	-0.3	11260
886	1.4691284e+02	2.1072214e+02	1.00e+00	1.333e+01	-0.3	11357
887	1.4682554e+02	2.3400391e+01	1.00e+00	2.787e+00	0.0	11312
888	1.4681583e+02	1.6152045e+01	1.00e+00	2.376e+00	0.0	11294
889	1.4672289e+02	2.6307309e+01	1.00e+00	2.940e+00	0.0	11221
890	1.4672944e+02	2.2522158e+02	1.00e+00	1.418e+01	-0.3	11243
891	1.4662977e+02	1.4983275e+03	1.00e+00	8.435e+01	0.0	33314
892	1.4378462e+02	1.1557080e+03	1.00e+00	6.363e+01	-0.3	33530
893	1.4038000e+02	8.5843665e+01	1.00e+00	5.591e+00	0.0	33615
894	1.3975183e+02	2.0425107e+01	1.00e+00	2.247e+00	0.0	33703
895	1.3433431e+02	1.2366710e+02	1.00e+00	6.967e+00	0.0	25233
896	1.3903876e+02	1.0015632e+03	1.00e+00	5.076e+01	-0.3	25614

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897	1.3491412e+02	4.5112270e+02	1.00e+00	2.264e+01	0.0	27202
898	1.3396379e+02	2.6456539e+01	1.00e+00	2.323e+00	0.0	26138
899	1.3387788e+02	2.5458446e+01	1.00e+00	2.281e+00	0.0	25150
900	1.3377865e+02	1.7423302e+02	1.00e+00	9.340e+00	-0.3	16544
901	1.3287437e+02	1.0314978e+02	1.00e+00	5.839e+00	-0.3	20010
902	1.3251061e+02	3.0830671e+01	1.00e+00	2.531e+00	0.0	19267
903	1.3245495e+02	2.0017526e+01	1.00e+00	2.038e+00	0.0	18439
904	1.3233309e+02	2.0809667e+01	1.00e+00	2.070e+00	0.0	17023
905	1.3231345e+02	3.0409616e+02	1.00e+00	1.496e+01	0.0	14221
906	1.3181193e+02	1.7414494e+02	1.00e+00	9.032e+00	-0.3	16828
907	1.3169447e+02	4.5172661e+01	1.00e+00	3.176e+00	0.0	15865
908	1.3165793e+02	2.0149280e+01	1.00e+00	2.054e+00	0.0	15299
909	1.3156893e+02	4.6447598e+01	1.00e+00	3.232e+00	0.0	14355
910	1.3162541e+02	3.4970621e+02	1.00e+00	1.689e+01	-0.3	13762
911	1.3154584e+02	3.2747283e+02	1.00e+00	1.584e+01	-0.3	14684
912	1.3140050e+02	6.8576824e+01	1.00e+00	4.226e+00	0.0	14014
913	1.3138270e+02	2.0114419e+01	1.00e+00	2.053e+00	0.0	13823
914	1.3134542e+02	2.0068321e+01	1.00e+00	2.053e+00	0.0	13621
915	1.3114317e+02	1.4007222e+03	1.00e+00	6.381e+01	0.0	11861
916	1.3046931e+02	1.0656295e+03	1.00e+00	4.842e+01	-0.3	13668
917	1.2979324e+02	8.7368745e+01	1.00e+00	5.077e+00	0.0	13297
918	1.2976993e+02	2.7590596e+01	1.00e+00	2.465e+00	0.0	12878
919	1.2970786e+02	2.1395657e+01	1.00e+00	2.160e+00	0.0	12280
920	1.2969861e+02	1.6416386e+02	1.00e+00	8.457e+00	0.0	11795
921	1.2954591e+02	4.5194129e+01	1.00e+00	3.234e+00	-0.3	12514
922	1.2951190e+02	3.1453791e+01	1.00e+00	2.617e+00	0.0	12195
923	1.2949035e+02	1.8463450e+01	1.00e+00	2.041e+00	0.0	12031
924	1.2941828e+02	3.0514158e+01	1.00e+00	2.545e+00	0.0	11774
925	1.2938562e+02	1.2981265e+02	1.00e+00	6.885e+00	-0.3	11789
926	1.2940313e+02	2.7779324e+02	1.00e+00	1.332e+01	-0.3	11901
927	1.2933149e+02	1.0767785e+02	1.00e+00	5.893e+00	0.0	11850
928	1.2931282e+02	1.8663979e+01	1.00e+00	2.039e+00	0.0	11776
929	1.2930049e+02	1.8663345e+01	1.00e+00	2.039e+00	0.0	11737
930	1.2903831e+02	2.6499351e+02	1.00e+00	1.271e+01	0.0	11519
931	1.2905564e+02	3.1873104e+02	1.00e+00	1.499e+01	-0.3	11574
932	1.2896923e+02	4.8905295e+01	1.00e+00	3.348e+00	0.0	11553
933	1.2895992e+02	1.8642495e+01	1.00e+00	2.039e+00	0.0	11535
934	1.2892857e+02	1.8659820e+01	1.00e+00	2.038e+00	0.0	11513
935	1.2855834e+02	6.7379133e+02	1.00e+00	3.018e+01	-0.3	11196
936	1.2791766e+02	1.7440347e+02	1.00e+00	8.671e+00	-0.3	11831
937	1.2784201e+02	3.0281417e+01	1.00e+00	2.546e+00	0.0	11643
938	1.2782642e+02	2.3606420e+01	1.00e+00	2.259e+00	0.0	11521
939	1.2774427e+02	1.1542641e+02	1.00e+00	6.096e+00	0.0	11255
940	1.2771625e+02	1.0695547e+02	1.00e+00	5.773e+00	-0.3	11597
941	1.2767418e+02	4.0340880e+01	1.00e+00	2.946e+00	0.0	11412
942	1.2766196e+02	1.8531420e+01	1.00e+00	2.026e+00	0.0	11350
943	1.2763951e+02	1.8378741e+01	1.00e+00	2.026e+00	0.0	11259
944	1.2750643e+02	1.0022451e+03	1.00e+00	4.348e+01	0.0	11033
945	1.2703180e+02	5.7583798e+02	1.00e+00	2.543e+01	-0.3	11566
946	1.2677147e+02	3.1199943e+01	1.00e+00	2.565e+00	0.0	11454
947	1.2675900e+02	2.5886779e+01	1.00e+00	2.342e+00	0.0	11363
948	1.2670700e+02	1.4878859e+02	1.00e+00	7.466e+00	0.0	11095
949	1.2662905e+02	4.3735098e+01	1.00e+00	3.057e+00	-0.3	11625
950	1.2660456e+02	2.3282205e+01	1.00e+00	2.224e+00	0.0	11473

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951	1.2658848e+02	1.8313013e+01	1.00e+00	2.016e+00	0.0	11350
952	1.2653396e+02	2.1877476e+01	1.00e+00	2.174e+00	0.0	11115
953	1.2650557e+02	1.0017085e+02	1.00e+00	5.404e+00	-0.3	11125
954	1.2656384e+02	2.0621134e+02	1.00e+00	9.859e+00	-0.3	11174
955	1.2646112e+02	8.0429755e+01	1.00e+00	4.586e+00	0.0	11150
956	1.2644480e+02	1.8187701e+01	1.00e+00	2.014e+00	0.0	11125
957	1.2643534e+02	1.8195589e+01	1.00e+00	2.014e+00	0.0	11076
958	1.2581270e+02	4.1935935e+02	1.00e+00	1.855e+01	0.0	10860
959	1.2584984e+02	4.4835819e+02	1.00e+00	1.965e+01	-0.3	11247
960	1.2564075e+02	6.1080909e+01	1.00e+00	3.778e+00	0.0	11135
961	1.2563039e+02	2.4136889e+01	1.00e+00	2.259e+00	0.0	11055
962	1.2560554e+02	2.2525530e+01	1.00e+00	2.192e+00	0.0	10956
963	1.2545021e+02	3.5526535e+02	1.00e+00	1.565e+01	0.0	10814
964	1.2535932e+02	2.7832328e+02	1.00e+00	1.266e+01	-0.3	11395
965	1.2523594e+02	3.6441656e+01	1.00e+00	2.730e+00	0.0	11165
966	1.2522572e+02	1.9706922e+01	1.00e+00	2.056e+00	0.0	11066
967	1.2518351e+02	2.5409391e+01	1.00e+00	2.308e+00	0.0	10923
968	1.2519584e+02	2.7527186e+02	1.00e+00	1.239e+01	-0.3	10830
969	1.2510138e+02	2.7100480e+01	1.00e+00	2.355e+00	-0.3	11037
970	1.2508498e+02	2.6001185e+01	1.00e+00	2.311e+00	0.0	10966
971	1.2506595e+02	1.7992722e+01	1.00e+00	1.995e+00	0.0	10897
972	1.2495917e+02	1.1409455e+02	1.00e+00	5.895e+00	0.0	10799
973	1.2506011e+02	4.4226106e+02	1.00e+00	1.922e+01	-0.3	10873
974	1.2495419e+02	2.3783927e+02	1.00e+00	1.090e+01	0.0	10946
975	1.2490404e+02	1.7928462e+01	1.00e+00	1.993e+00	0.0	10881
976	1.2489718e+02	1.7932692e+01	1.00e+00	1.993e+00	0.0	10845
977	1.2476765e+02	6.4374422e+01	1.00e+00	3.865e+00	0.0	10762
978	1.2478376e+02	1.7055315e+02	1.00e+00	8.180e+00	-0.3	10830
979	1.2477164e+02	1.7500831e+02	1.00e+00	8.320e+00	0.0	10890
980	1.2471674e+02	2.4583020e+01	1.00e+00	2.260e+00	0.0	10839
981	1.2470947e+02	1.7931498e+01	1.00e+00	1.991e+00	0.0	10811
982	1.2467738e+02	1.8028952e+01	1.00e+00	1.997e+00	0.0	10763
983	1.2452874e+02	3.9468151e+02	1.00e+00	1.710e+01	-0.3	10765
984	1.2453357e+02	4.1139847e+02	1.00e+00	1.786e+01	-0.3	11006
985	1.2373282e+02	4.2234867e+01	1.00e+00	2.865e+00	0.0	26426
986	1.2226506e+02	3.6724980e+01	1.00e+00	2.586e+00	0.0	31951
987	1.2239717e+02	1.8284903e+03	1.00e+00	7.218e+01	0.0	13856
988	1.1655609e+02	5.1496420e+02	1.00e+00	1.914e+01	-0.3	16839
989	1.1613368e+02	4.1236365e+01	1.00e+00	2.478e+00	0.0	17023
990	1.1608827e+02	2.2464184e+01	1.00e+00	1.822e+00	0.0	16311
991	1.1602493e+02	8.8259754e+01	1.00e+00	3.993e+00	0.0	13835
992	1.1582958e+02	3.4799340e+01	1.00e+00	2.237e+00	-0.3	15875
993	1.1578001e+02	2.5317568e+01	1.00e+00	1.894e+00	0.0	14598
994	1.1574058e+02	2.2285606e+01	1.00e+00	1.807e+00	0.0	13944
995	1.1568066e+02	9.2468757e+01	1.00e+00	4.228e+00	0.0	13193
996	1.1565228e+02	8.1092303e+01	1.00e+00	3.841e+00	-0.3	13247
997	1.1563179e+02	6.1015062e+01	1.00e+00	3.149e+00	0.0	13093
998	1.1561038e+02	6.7925881e+01	1.00e+00	3.386e+00	0.0	12962
999	1.1558409e+02	1.7786675e+02	1.00e+00	7.186e+00	0.0	12783
1000	1.1556791e+02	2.0960883e+02	1.00e+00	8.273e+00	-0.3	12706

ERROR EXIT -- Too many iterations

Products with A : 1456 Total time (secs) : 577.9

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Products with A'	:	1002	Project time (secs)	:	6.4
Newton iterations	:	18	Mat-vec time (secs)	:	561.9
Line search its	:	921	Subspace iterations	:	0

/Tools/mat\_toolbox/spgl1-slim/spgl1.m

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SPGL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

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No. rows	:	6400	No. columns	:	34341
Initial tau	:	1.94e+05	Two-norm of b	:	1.56e+04
Optimality tol	:	1.00e-04	Target one-norm of x	:	1.94e+05
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	1.5573440e+04	1.7857050e+01	1.12e+04	0.0	0	0
1	1.4280173e+04	1.9109563e+01	1.02e+04	0.0	33508	0
2	5.3048311e+03	1.0182462e+01	7.41e+02	0.0	34281	0
3	5.1858723e+03	1.0296608e+01	7.22e+02	0.0	34280	0
4	2.4340883e+03	2.2352129e+01	3.95e+02	0.0	30521	0
5	4.0570855e+03	4.6224973e+01	1.70e+03	-0.3	30792	0
6	2.5921886e+03	3.9088745e+01	7.81e+02	0.0	34305	0
7	2.2079003e+03	1.2213163e+01	1.74e+02	0.0	34302	0
8	2.1817398e+03	1.2259303e+01	1.71e+02	0.0	34306	0
9	2.4263821e+03	5.2014246e+01	9.26e+02	0.0	22654	0
10	2.3553417e+03	8.1334436e+01	1.05e+03	-0.3	23495	0
11	1.6281174e+03	3.7558938e+01	3.10e+02	0.0	34179	0
12	1.5414001e+03	1.5967495e+01	1.20e+02	0.0	34204	0
13	1.5182247e+03	1.5593732e+01	1.15e+02	0.0	34228	0
14	1.4907237e+03	4.5158733e+01	3.19e+02	-0.3	22749	0
15	1.3624588e+03	1.5142890e+01	8.67e+01	-0.3	23654	0
16	1.3513938e+03	1.3097331e+01	8.38e+01	0.0	24567	0
17	1.3436933e+03	1.3278975e+01	8.31e+01	0.0	23395	0
18	1.2183319e+03	5.7087980e+01	2.40e+02	0.0	18997	0
19	1.1963960e+03	4.1771603e+01	1.71e+02	-0.3	21115	0
20	1.1708131e+03	1.4488360e+01	6.81e+01	0.0	25769	0
21	1.1667065e+03	1.3161830e+01	6.38e+01	0.0	22139	0
22	1.1549830e+03	1.3936032e+01	6.56e+01	0.0	20175	0
23	1.1383891e+03	4.5208821e+01	1.68e+02	-0.3	20191	0
24	1.1224670e+03	1.9624198e+01	8.21e+01	-0.3	20811	0
25	1.1171444e+03	1.3512552e+01	6.04e+01	0.0	20366	0
26	1.1121016e+03	1.3454309e+01	6.04e+01	0.0	19640	0
27	1.0524353e+03	7.9542245e+01	2.35e+02	0.0	17241	0
28	1.0375670e+03	5.0650416e+01	1.62e+02	-0.3	19266	0
29	1.0216145e+03	1.3919253e+01	5.28e+01	0.0	19719	0
30	1.0194816e+03	1.3670004e+01	5.26e+01	0.0	18577	0
31	9.9621351e+02	1.4265164e+01	5.36e+01	0.0	17119	0
32	9.9642851e+02	4.0115939e+01	1.14e+02	-0.3	17702	0
33	1.0073487e+03	7.3022262e+01	2.13e+02	0.0	19186	0
34	9.8161450e+02	1.3900802e+01	4.94e+01	0.0	18394	0
35	9.7959242e+02	1.3686585e+01	4.92e+01	0.0	17806	0
36	9.7406519e+02	1.4199870e+01	5.03e+01	0.0	17085	0
37	9.3985304e+02	2.0232215e+02	4.48e+02	0.0	13516	0
38	8.0062488e+02	1.5964188e+02	2.86e+02	-0.3	16317	0



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39	7.5968850e+02	2.5543516e+01	4.68e+01	0.0	33652	0
40	7.5535214e+02	1.6011858e+01	3.46e+01	0.0	27362	0
41	7.5183871e+02	1.2480674e+01	2.91e+01	0.0	21489	0
42	7.4109757e+02	6.0756738e+01	9.93e+01	-0.3	15912	0
43	7.5515352e+02	1.2191430e+02	1.87e+02	-0.3	18402	0
44	7.3243181e+02	3.9742148e+01	6.65e+01	0.0	19872	0
45	7.3027910e+02	1.3054373e+01	2.88e+01	0.0	18362	0
46	7.2893415e+02	1.3838192e+01	2.98e+01	0.0	16987	0
47	7.2171516e+02	1.0954072e+02	1.69e+02	0.0	13431	0
48	6.8107929e+02	6.5525265e+01	8.55e+01	-0.3	15966	0
49	6.7049388e+02	2.1858422e+01	3.63e+01	0.0	21480	0
50	6.6895482e+02	1.5728379e+01	2.87e+01	0.0	17938	0
51	6.6709089e+02	1.5969990e+01	2.90e+01	0.0	16080	0
52	6.6946989e+02	9.4305153e+01	1.13e+02	0.0	13633	0
53	6.6274906e+02	6.5868010e+01	8.90e+01	-0.3	16714	0
54	6.5033873e+02	1.6873111e+01	2.77e+01	0.0	18170	0
55	6.4956284e+02	1.6407597e+01	2.75e+01	0.0	16474	0
56	6.4469405e+02	1.5798319e+01	2.73e+01	0.0	14144	0
57	6.4320574e+02	2.6044276e+01	3.64e+01	-0.3	14400	0
58	6.4671266e+02	7.0153625e+01	8.84e+01	0.0	14857	0
59	6.4098446e+02	3.8536447e+01	4.96e+01	0.0	15134	0
60	6.3912755e+02	1.5895634e+01	2.65e+01	0.0	14961	0
61	6.3852197e+02	1.6247155e+01	2.68e+01	0.0	14178	0
62	6.2760035e+02	3.2737521e+01	4.35e+01	0.0	13186	0
63	6.3023926e+02	8.5739535e+01	9.55e+01	-0.3	13617	0
64	6.2914899e+02	9.7594559e+01	1.11e+02	0.0	14987	0
65	6.2386736e+02	1.6526386e+01	2.59e+01	0.0	14407	0
66	6.2338262e+02	1.5421868e+01	2.49e+01	0.0	13901	0
67	6.2004123e+02	1.6573238e+01	2.61e+01	0.0	13186	0
68	6.1696987e+02	7.7662178e+01	8.33e+01	-0.3	13200	0
69	6.1591525e+02	7.8170106e+01	8.77e+01	-0.3	14775	0
70	6.1224880e+02	1.4902924e+01	2.33e+01	0.0	14388	0
71	6.1173304e+02	1.5008326e+01	2.36e+01	0.0	13906	0
72	6.0943759e+02	1.6912987e+01	2.57e+01	0.0	13273	0
73	6.0818065e+02	1.2185765e+02	1.21e+02	-0.3	12732	0
74	6.0142859e+02	9.5655849e+01	1.02e+02	-0.3	14941	0
75	5.9295122e+02	1.5428409e+01	2.25e+01	0.0	15830	0
76	5.9239554e+02	1.5090013e+01	2.24e+01	0.0	14760	0
77	5.8776409e+02	2.7931892e+01	3.50e+01	0.0	13088	0
78	5.8914731e+02	5.1591895e+01	5.34e+01	-0.3	13963	0
79	5.8570839e+02	2.4258625e+01	3.09e+01	0.0	14784	0
80	5.8462284e+02	1.5092261e+01	2.21e+01	0.0	13913	0
81	5.8411631e+02	1.5141735e+01	2.22e+01	0.0	13416	0
82	5.7207800e+02	4.9993508e+01	5.15e+01	0.0	12516	0
83	5.7950535e+02	1.3648948e+02	1.26e+02	-0.3	13539	0
84	5.6978269e+02	4.4113478e+01	4.57e+01	0.0	15170	0
85	5.6859055e+02	1.5110651e+01	2.11e+01	0.0	14164	0
86	5.6812265e+02	1.5617642e+01	2.16e+01	0.0	13437	0
87	5.5612554e+02	1.8827290e+02	1.61e+02	0.0	12147	0
88	5.6105467e+02	2.4000916e+02	2.02e+02	-0.3	14304	0
89	5.4466028e+02	3.7136675e+01	3.66e+01	0.0	20076	0
90	5.4375704e+02	1.7618341e+01	2.17e+01	0.0	16329	0
91	5.4304649e+02	1.6665064e+01	2.09e+01	0.0	14272	0
92	5.4437719e+02	1.5257787e+02	1.23e+02	0.0	12078	0

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93	5.4234486e+02	1.3740090e+02	1.14e+02	-0.3	14544	0
94	5.2827642e+02	1.9900752e+01	2.19e+01	0.0	18288	0
95	5.2768659e+02	1.5547300e+01	1.90e+01	0.0	15584	0
96	5.2616945e+02	1.6572922e+01	1.98e+01	0.0	13485	0
97	5.2803808e+02	1.2665164e+02	9.85e+01	-0.3	12177	0
98	5.2346109e+02	9.8423057e+01	7.80e+01	-0.3	14163	0
99	5.1805919e+02	1.6038525e+01	1.87e+01	0.0	16037	0
100	5.1763845e+02	1.5774329e+01	1.86e+01	0.0	14265	0
101	5.1563143e+02	1.6183833e+01	1.89e+01	0.0	12652	0
102	5.1462007e+02	5.6054434e+01	4.55e+01	-0.3	12729	0
103	5.1677730e+02	1.1226502e+02	8.61e+01	-0.3	13012	0
104	5.1296886e+02	4.3602589e+01	3.71e+01	0.0	13230	0
105	5.1238537e+02	1.5336958e+01	1.80e+01	0.0	12823	0
106	5.1203386e+02	1.5688269e+01	1.82e+01	0.0	12498	0
107	4.9920829e+02	1.0161640e+02	7.33e+01	0.0	11649	0
108	4.9762421e+02	1.1250392e+02	7.94e+01	-0.3	13230	0
109	4.9332549e+02	2.2452035e+01	2.14e+01	0.0	14931	0
110	4.9293756e+02	1.7043692e+01	1.80e+01	0.0	13409	0
111	4.9200601e+02	1.7773154e+01	1.85e+01	0.0	12399	0
112	4.9108386e+02	1.3295302e+02	8.94e+01	-0.3	11675	0
113	4.8615839e+02	4.4482472e+01	3.47e+01	-0.3	12897	0
114	4.8508829e+02	1.7612595e+01	1.78e+01	0.0	12890	0
115	4.8478842e+02	1.6688075e+01	1.73e+01	0.0	12444	0
116	4.8124620e+02	6.5823016e+01	4.67e+01	0.0	11681	0
117	4.8169860e+02	1.0400820e+02	6.94e+01	-0.3	12826	0
118	4.7913878e+02	2.5305122e+01	2.21e+01	0.0	13374	0
119	4.7880137e+02	1.6494636e+01	1.68e+01	0.0	12590	0
120	4.7834091e+02	1.6535010e+01	1.69e+01	0.0	12094	0
121	4.7096614e+02	2.7972460e+02	1.67e+02	0.0	11402	0
122	4.7706057e+02	3.9532788e+02	2.40e+02	-0.3	13074	0
123	4.6525470e+02	4.3121822e+01	3.08e+01	0.0	15942	0
124	4.6487154e+02	1.5877060e+01	1.56e+01	0.0	13839	0
125	4.6430129e+02	1.6924836e+01	1.62e+01	0.0	12506	0
126	4.6173928e+02	1.5960056e+02	9.49e+01	-0.3	11479	0
127	4.6122389e+02	1.8002323e+02	1.06e+02	-0.3	12817	0
128	4.5806691e+02	2.3832441e+01	1.96e+01	0.0	13641	0
129	4.5780895e+02	1.6809796e+01	1.59e+01	0.0	12653	0
130	4.5701803e+02	1.6966568e+01	1.59e+01	0.0	11948	0
131	4.5441533e+02	2.1402586e+02	1.21e+02	-0.3	11375	0
132	4.5767379e+02	3.1217600e+02	1.75e+02	-0.3	12483	0
133	4.5107330e+02	3.2842229e+01	2.39e+01	0.0	13301	0
134	4.5083007e+02	1.6690556e+01	1.54e+01	0.0	12363	0
135	4.5037195e+02	1.7527314e+01	1.58e+01	0.0	11770	0
136	4.4640345e+02	3.4235633e+02	1.82e+02	0.0	11156	0
137	4.4256102e+02	2.7079656e+02	1.44e+02	-0.3	12805	0
138	4.3786572e+02	1.9752423e+01	1.61e+01	0.0	13818	0
139	4.3763959e+02	1.6845972e+01	1.48e+01	0.0	12672	0
140	4.3654512e+02	1.9770170e+01	1.61e+01	0.0	11638	0
141	4.3604552e+02	3.9257516e+01	2.57e+01	-0.3	11769	0
142	4.3592411e+02	7.5372921e+01	4.33e+01	-0.3	11801	0
143	4.3524228e+02	3.3872161e+01	2.29e+01	0.0	11723	0
144	4.3498776e+02	1.6986481e+01	1.46e+01	0.0	11591	0
145	4.3474904e+02	1.7588294e+01	1.49e+01	0.0	11486	0
146	4.3060592e+02	9.6508976e+01	5.27e+01	0.0	11177	0

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147	4.3472158e+02	3.8181946e+02	1.92e+02	-0.3	11436	0
148	4.2993194e+02	1.0761802e+02	5.77e+01	0.0	12177	0
149	4.2934705e+02	1.7561493e+01	1.46e+01	0.0	11693	0
150	4.2919504e+02	1.7528074e+01	1.46e+01	0.0	11516	0
151	4.2245013e+02	1.0678458e+02	5.61e+01	0.0	11046	0
152	4.2304856e+02	1.2433607e+02	6.32e+01	-0.3	11761	0
153	4.2056469e+02	2.8415291e+01	1.91e+01	0.0	12530	0
154	4.2035862e+02	1.6915335e+01	1.39e+01	0.0	11806	0
155	4.2002568e+02	1.7635877e+01	1.42e+01	0.0	11414	0
156	4.1718712e+02	2.2304045e+02	1.06e+02	-0.3	10997	0
157	4.1611481e+02	1.6899738e+02	8.21e+01	-0.3	11870	0
158	4.1339875e+02	1.8167078e+01	1.39e+01	0.0	12183	0
159	4.1324747e+02	1.7937065e+01	1.39e+01	0.0	11711	0
160	4.1200521e+02	2.4705842e+01	1.69e+01	0.0	11203	0
161	4.1212011e+02	1.1061023e+02	5.41e+01	-0.3	11374	0
162	4.1141468e+02	8.4320560e+01	4.30e+01	-0.3	11712	0
163	4.1087120e+02	1.7805595e+01	1.37e+01	0.0	11461	0
164	4.1072654e+02	1.7788822e+01	1.37e+01	0.0	11338	0
165	4.0947550e+02	1.7632124e+01	1.37e+01	0.0	11094	0
166	4.1077280e+02	1.8102752e+02	8.36e+01	-0.3	11159	0
167	4.0748832e+02	2.6421856e+01	1.74e+01	-0.3	12188	0
168	4.0712390e+02	1.6868199e+01	1.30e+01	0.0	11911	0
169	4.0684149e+02	1.7774525e+01	1.34e+01	0.0	11660	0
170	4.0488117e+02	8.0987575e+01	4.10e+01	0.0	11026	0
171	4.0468750e+02	7.1698983e+01	3.56e+01	-0.3	11897	0
172	4.0317331e+02	2.5783445e+01	1.68e+01	0.0	12592	0
173	4.0299156e+02	1.7684261e+01	1.33e+01	0.0	11839	0
174	4.0258595e+02	1.7784884e+01	1.33e+01	0.0	11358	0
175	4.0075772e+02	2.7189481e+02	1.18e+02	0.0	10796	0
176	3.9420788e+02	4.4008894e+01	2.37e+01	-0.3	12180	0
177	3.9363769e+02	1.7481541e+01	1.27e+01	0.0	12236	0
178	3.9336202e+02	1.7611488e+01	1.27e+01	0.0	11798	0
179	3.9266844e+02	9.0327424e+01	4.15e+01	0.0	10980	0
180	3.9260026e+02	1.0504417e+02	4.76e+01	-0.3	12484	0
181	3.9036426e+02	2.1731198e+01	1.41e+01	0.0	13229	0
182	3.9017501e+02	1.8335824e+01	1.28e+01	0.0	12285	0
183	3.8980106e+02	1.8585220e+01	1.29e+01	0.0	11553	0
184	3.8821400e+02	2.0813272e+02	8.66e+01	0.0	10771	0
185	3.8541673e+02	1.1298815e+02	4.91e+01	-0.3	12352	0
186	3.8405080e+02	1.9995235e+01	1.32e+01	0.0	12796	0
187	3.8385827e+02	1.7833016e+01	1.23e+01	0.0	12068	0
188	3.8285980e+02	3.0482569e+01	1.70e+01	0.0	11133	0
189	3.8259809e+02	3.8349504e+01	1.99e+01	-0.3	11591	0
190	3.8234186e+02	3.0752982e+01	1.71e+01	0.0	11203	0
191	3.8213729e+02	2.7627833e+01	1.59e+01	0.0	11127	0
192	3.8189265e+02	3.5582062e+01	1.89e+01	0.0	10962	0
193	3.8176727e+02	1.2239171e+02	5.15e+01	0.0	10913	0
194	3.8202243e+02	2.0126937e+02	8.15e+01	0.0	10935	0
195	3.8116526e+02	3.9788698e+01	2.04e+01	0.0	10949	0
196	3.8103897e+02	1.8424928e+01	1.24e+01	0.0	10879	0
197	3.8085164e+02	1.8612755e+01	1.24e+01	0.0	10828	0
198	3.6254736e+02	3.8655059e+02	1.36e+02	0.0	10348	0
199	3.6437417e+02	5.0111390e+02	1.77e+02	-0.3	11803	0
200	3.5883569e+02	6.9789684e+01	2.83e+01	0.0	14672	0

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ERROR EXIT -- Too many iterations

Products with A	:	298	Total time (secs)	:	110.3
Products with A'	:	201	Project time (secs)	:	1.2
Newton iterations	:	0	Mat-vec time (secs)	:	107.4
Line search its	:	212	Subspace iterations	:	0

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PQNL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

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No. rows	:	6400	No. columns	:	34341
Initial tau	:	1.94e+05	Two-norm of b	:	1.56e+04
Optimality tol	:	1.00e-04	Target one-norm of x	:	1.94e+05
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	1.5573440e+04	1.7857050e+01	1.12e+04	0.0	0	0

Inside of minConf\_PQN

Iteration	FunEvals	Projections	Step Length	rNorm2	O
1	1	4	3.12500e-02	1.39280e+04	1.989
2	1	33	1.00000e+00	5.29244e+03	2.405
3	1	62	1.00000e+00	5.17320e+03	2.415
4	1	136	1.00000e+00	2.26081e+03	2.635
5	1	220	1.25000e-01	2.20973e+03	3.081
6	1	284	1.00000e+00	2.12607e+03	2.729
7	1	382	1.00000e+00	1.74782e+03	2.897
8	1	500	1.00000e+00	1.62009e+03	2.405
9	1	613	1.00000e+00	1.49406e+03	1.775
10	1	740	1.00000e+00	1.44831e+03	1.725
11	1	948	1.00000e+00	1.38386e+03	1.865
12	1	1125	1.00000e+00	1.29270e+03	1.541
13	1	1387	1.00000e+00	1.21316e+03	1.395
14	1	1678	1.00000e+00	1.16612e+03	1.702
15	1	2014	1.00000e+00	1.11792e+03	1.683
16	1	2263	1.00000e+00	1.05397e+03	1.281
17	1	2599	1.00000e+00	1.01577e+03	1.165
18	1	2917	1.00000e+00	9.88171e+02	1.342
19	1	3287	1.00000e+00	9.55074e+02	1.428
20	1	3646	1.00000e+00	9.17899e+02	1.269
21	1	4077	1.00000e+00	8.83081e+02	1.133
22	1	4562	1.00000e+00	8.58218e+02	1.107
23	1	5016	1.00000e+00	8.36270e+02	1.178
24	1	5532	1.00000e+00	8.12125e+02	1.208
25	1	5906	1.00000e+00	7.86422e+02	1.058
26	1	6402	1.00000e+00	7.63596e+02	9.246
27	1	6941	1.00000e+00	7.44518e+02	8.716
28	1	7399	1.00000e+00	7.27606e+02	8.587
29	1	8005	1.00000e+00	7.09588e+02	8.743
30	1	8527	1.00000e+00	6.90624e+02	8.368
31	1	9016	1.00000e+00	6.72274e+02	7.260
32	1	9576	1.00000e+00	6.55298e+02	6.600
33	1	10336	1.00000e+00	6.39694e+02	6.492

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34	1	10950	1.00000e+00	6.24343e+02	6.086
35	1	11645	1.00000e+00	6.07972e+02	5.660
36	1	12235	1.00000e+00	5.92417e+02	5.001
37	1	12846	1.00000e+00	5.77038e+02	4.428
38	1	13682	1.00000e+00	5.62901e+02	4.078
39	1	14413	1.00000e+00	5.49422e+02	4.234
40	1	15150	1.00000e+00	5.36222e+02	4.171
41	1	15748	1.00000e+00	5.23147e+02	3.956
42	1	16395	1.00000e+00	5.12127e+02	4.025
43	1	17205	1.00000e+00	5.01317e+02	3.977
44	1	18052	1.00000e+00	4.91196e+02	3.741
45	1	18848	1.00000e+00	4.82446e+02	3.958
46	1	19757	1.00000e+00	4.73646e+02	3.990
47	1	20682	1.00000e+00	4.64418e+02	3.633
48	1	21304	1.00000e+00	4.56265e+02	3.554
49	1	22364	1.00000e+00	4.49006e+02	3.762
50	1	23350	1.00000e+00	4.41788e+02	3.875
51	1	24322	1.00000e+00	4.34423e+02	3.718
52	1	25072	1.00000e+00	4.27758e+02	3.513
53	1	26001	1.00000e+00	4.21805e+02	3.545
54	1	26884	1.00000e+00	4.16056e+02	3.687
55	1	27822	1.00000e+00	4.10018e+02	3.600
56	1	28589	1.00000e+00	4.03749e+02	3.381
57	1	29358	1.00000e+00	3.98277e+02	3.198
58	1	30371	1.00000e+00	3.92849e+02	3.089
59	1	31267	1.00000e+00	3.87531e+02	3.041
60	1	31995	1.00000e+00	3.82077e+02	2.952
61	1	32833	1.00000e+00	3.76835e+02	2.905
62	1	33726	1.00000e+00	3.72006e+02	2.908
63	1	34604	1.00000e+00	3.67252e+02	2.726
64	1	35904	1.00000e+00	3.62238e+02	2.690
65	1	36815	1.00000e+00	3.57546e+02	2.625
66	1	37815	1.00000e+00	3.52787e+02	2.596
67	1	38797	1.00000e+00	3.48395e+02	2.512
68	1	40085	1.00000e+00	3.43704e+02	2.385
69	1	41271	1.00000e+00	3.39292e+02	2.307
70	1	42469	1.00000e+00	3.35084e+02	2.208
71	1	43359	1.00000e+00	3.31161e+02	2.248
72	1	44575	1.00000e+00	3.27720e+02	2.319
73	1	45627	1.00000e+00	3.23978e+02	2.343
74	1	47072	1.00000e+00	3.20262e+02	2.241
75	1	48233	1.00000e+00	3.16404e+02	2.099
76	1	49312	1.00000e+00	3.12972e+02	2.145
77	1	50678	1.00000e+00	3.09698e+02	2.264
78	1	52431	1.00000e+00	3.06269e+02	2.269
79	1	53968	1.00000e+00	3.02706e+02	2.009
80	1	55235	1.00000e+00	2.99337e+02	1.892
81	1	56379	1.00000e+00	2.96526e+02	1.966
82	1	57449	1.00000e+00	2.93612e+02	2.096
83	1	58839	1.00000e+00	2.90739e+02	2.049
84	1	60132	1.00000e+00	2.87760e+02	1.933
85	1	61448	1.00000e+00	2.84905e+02	1.904
86	1	62821	1.00000e+00	2.82168e+02	1.933
87	1	64205	1.00000e+00	2.79435e+02	2.007

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88	1	65946	1.00000e+00	2.76698e+02	1.912
89	1	67108	1.00000e+00	2.73897e+02	1.697
90	1	68316	1.00000e+00	2.71390e+02	1.598
91	1	69436	1.00000e+00	2.69010e+02	1.588
92	1	70904	1.00000e+00	2.66724e+02	1.586
93	1	72168	1.00000e+00	2.64370e+02	1.577
94	1	73477	1.00000e+00	2.61962e+02	1.552
95	1	74498	1.00000e+00	2.59489e+02	1.522
96	1	75567	1.00000e+00	2.57120e+02	1.502
97	1	77103	1.00000e+00	2.54965e+02	1.496
98	1	78423	1.00000e+00	2.52785e+02	1.517
99	1	79995	1.00000e+00	2.50409e+02	1.454
100	1	81811	1.00000e+00	2.48249e+02	1.375
101	1	83382	1.00000e+00	2.46220e+02	1.362
102	1	84617	1.00000e+00	2.44269e+02	1.388
103	1	86179	1.00000e+00	2.42234e+02	1.436
104	1	87229	1.00000e+00	2.40170e+02	1.495
105	1	88619	1.00000e+00	2.38188e+02	1.445
106	1	89780	1.00000e+00	2.36168e+02	1.360
107	1	91573	1.00000e+00	2.34372e+02	1.365
108	1	93066	1.00000e+00	2.32612e+02	1.444
109	1	94236	1.00000e+00	2.30848e+02	1.481
110	1	95899	1.00000e+00	2.28990e+02	1.339
111	1	98006	1.00000e+00	2.27139e+02	1.219
112	1	99295	1.00000e+00	2.25536e+02	1.231
113	1	101106	1.00000e+00	2.23907e+02	1.329
Number of projections exceeds maxProject					
113	2.2390714e+02	5.1148469e+01	9.74e+00	0.0	14834
Inside of minConf_PQN					
Iteration	FunEvals	Projections	Step Length	rNorm2	O
114	1	4	7.81250e-03	2.23460e+02	6.226
115	1	37	1.00000e+00	2.23109e+02	5.695
116	1	75	1.00000e+00	2.22202e+02	7.322
117	1	145	1.00000e+00	2.21321e+02	9.406
118	1	260	1.00000e+00	2.20109e+02	8.945
119	1	377	1.00000e+00	2.18326e+02	6.359
120	1	527	1.00000e+00	2.17501e+02	5.167
121	1	717	1.00000e+00	2.16888e+02	6.069
122	1	966	1.00000e+00	2.16033e+02	6.198
123	1	1174	1.00000e+00	2.14903e+02	6.756
124	1	1460	1.00000e+00	2.14220e+02	5.851
125	1	1757	1.00000e+00	2.13567e+02	6.730
126	1	1966	1.00000e+00	2.13037e+02	7.208
127	1	2291	1.00000e+00	2.12129e+02	6.524
128	1	2646	1.00000e+00	2.11320e+02	5.725
129	1	3050	1.00000e+00	2.10689e+02	6.554
130	1	3501	1.00000e+00	2.10111e+02	7.655
131	1	4042	1.00000e+00	2.09356e+02	7.618
132	1	4538	1.00000e+00	2.08413e+02	6.524
133	1	5164	1.00000e+00	2.07595e+02	6.793
134	1	5808	1.00000e+00	2.06953e+02	7.943
135	1	6274	1.00000e+00	2.06257e+02	8.665
136	1	6940	1.00000e+00	2.05326e+02	8.253
137	1	7443	1.00000e+00	2.04365e+02	7.008

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138	1	8064	1.00000e+00	2.03603e+02	6.858
139	1	8853	1.00000e+00	2.02964e+02	7.786
140	1	9654	1.00000e+00	2.02185e+02	8.573
141	1	10507	1.00000e+00	2.01231e+02	8.619
142	1	11276	1.00000e+00	2.00230e+02	8.102
143	1	12337	1.00000e+00	1.99341e+02	7.804
144	1	13135	1.00000e+00	1.98531e+02	8.111
145	1	14192	1.00000e+00	1.97671e+02	8.913
146	1	15326	1.00000e+00	1.96732e+02	9.056
147	1	16463	1.00000e+00	1.95740e+02	8.997
148	1	17917	1.00000e+00	1.94816e+02	9.127
149	1	19045	1.00000e+00	1.93904e+02	8.811
150	1	19829	1.00000e+00	1.92938e+02	8.470
151	1	20883	1.00000e+00	1.92067e+02	8.582
152	1	22220	1.00000e+00	1.91129e+02	9.259
153	1	23392	1.00000e+00	1.90286e+02	9.267
154	1	24373	1.00000e+00	1.89294e+02	9.083
155	1	25518	1.00000e+00	1.88248e+02	9.011
156	1	26770	1.00000e+00	1.87217e+02	9.002
157	1	28170	1.00000e+00	1.86266e+02	8.818
158	1	29115	1.00000e+00	1.85361e+02	8.998
159	1	30082	1.00000e+00	1.84392e+02	9.129
160	1	31270	1.00000e+00	1.83428e+02	8.752
161	1	32561	1.00000e+00	1.82476e+02	8.376
162	1	33707	1.00000e+00	1.81595e+02	8.387
163	1	35087	1.00000e+00	1.80704e+02	9.009
164	1	36524	1.00000e+00	1.79732e+02	8.894
165	1	37897	1.00000e+00	1.78719e+02	8.339
166	1	38869	1.00000e+00	1.77789e+02	8.204
167	1	39678	1.00000e+00	1.76870e+02	8.423
168	1	40928	1.00000e+00	1.75880e+02	8.388
169	1	42197	1.00000e+00	1.74906e+02	8.069
170	1	43587	1.00000e+00	1.73959e+02	7.871
171	1	45068	1.00000e+00	1.73050e+02	7.801
172	1	46108	1.00000e+00	1.72193e+02	8.038
173	1	47359	1.00000e+00	1.71312e+02	8.195
174	1	48716	1.00000e+00	1.70375e+02	8.463
175	1	50211	1.00000e+00	1.69401e+02	8.066
176	1	51408	1.00000e+00	1.68443e+02	7.503
177	1	52419	1.00000e+00	1.67617e+02	7.271
178	1	53406	1.00000e+00	1.66774e+02	7.487
179	1	54616	1.00000e+00	1.65929e+02	7.526
180	1	55922	1.00000e+00	1.65047e+02	7.395
181	1	57229	1.00000e+00	1.64166e+02	7.527
182	1	58645	1.00000e+00	1.63271e+02	7.658
183	1	60214	1.00000e+00	1.62320e+02	7.688
184	1	61706	1.00000e+00	1.61393e+02	7.444
185	1	63398	1.00000e+00	1.60528e+02	6.907
186	1	64847	1.00000e+00	1.59715e+02	6.826
187	1	66153	1.00000e+00	1.58939e+02	7.116
188	1	67337	1.00000e+00	1.58130e+02	7.314
189	1	68345	1.00000e+00	1.57338e+02	6.999
190	1	69960	1.00000e+00	1.56565e+02	6.787
191	1	71367	1.00000e+00	1.55847e+02	6.793

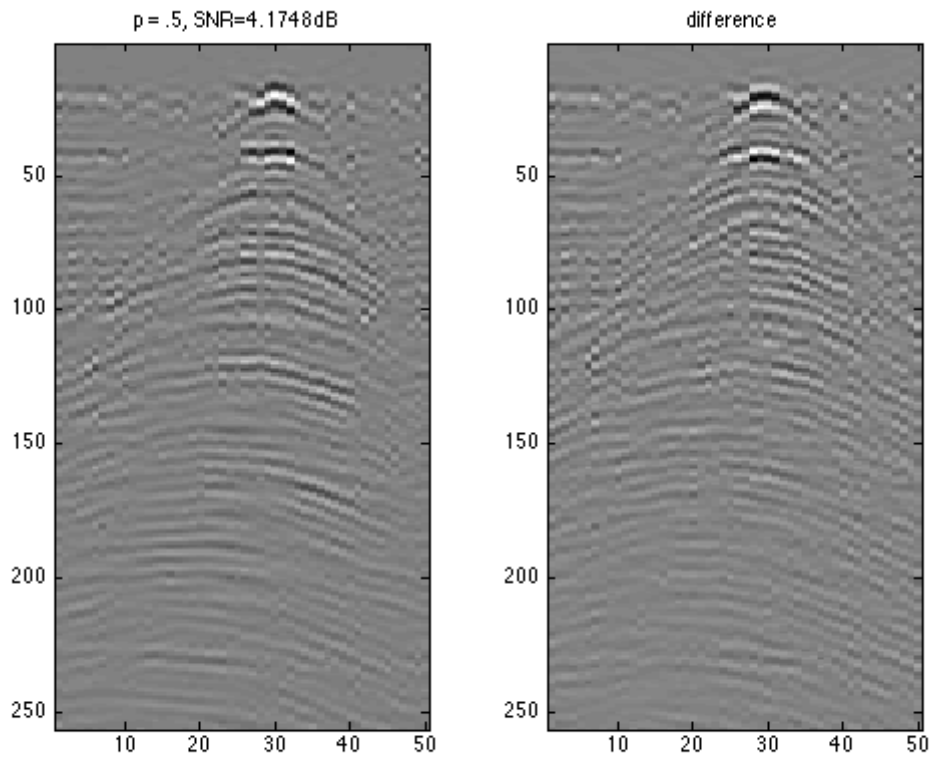
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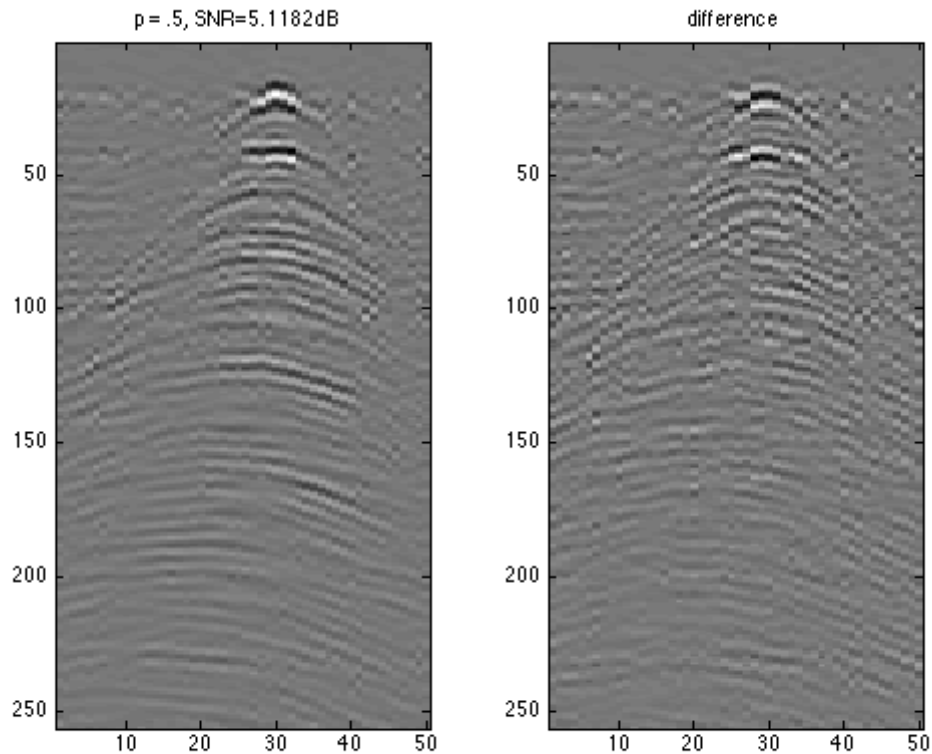
192	1	72964	1.00000e+00	1.55062e+02	6.754
193	1	74324	1.00000e+00	1.54266e+02	6.794
194	1	76022	1.00000e+00	1.53513e+02	6.711
195	1	77827	1.00000e+00	1.52740e+02	6.826
196	1	79578	1.00000e+00	1.51991e+02	6.615
197	1	81277	1.00000e+00	1.51230e+02	6.516
198	1	82567	1.00000e+00	1.50524e+02	6.286
199	1	84327	1.00000e+00	1.49796e+02	6.162
200	1	85779	1.00000e+00	1.49124e+02	6.203
200	1.4912415e+02	8.0972113e+01	6.45e+00	0.0 12433	0

ERROR EXIT -- Too many iterations

Products with A	:	218	Total time (secs)	:	6275.1
Products with A'	:	218	Project time (secs)	:	6622.8
Newton iterations	:	0	Mat-vec time (secs)	:	95.3







## if given known strict sparse vector

```
[m n] = size(A); k = .2*round(n/log(m));
p = randperm(n); x0 = zeros(n,1); x0(p(1:k)) = sign(randn(k,1));
figure;plot(x0)
b0 = A*x0;

tau = norm(x0,1);

options = spgSetParms('optTol', 1e-4, 'iterations', 200);%, 'fid', fid);
xinit = zeros(size(A,2),1);

xestspg = spg11(A,b0,tau,[],xinit,options);
xestpqn = pqn11_2(A,b0,tau,[],xinit,options);
snrspg = SNR(x0,xestspg);
snrpqn = SNR(x0,xestpqn);

figure('Name','strict sparse vector SPG');
subplot(2,1,1);plot(xestspg);
title(strcat(['p = .5, SNR=' num2str(snrspg) 'dB']));
subplot(2,1,2);plot(xestspg - x0);
title('difference')

figure('Name','strict sparse vector PQN');
subplot(2,1,1);plot(xestpqn);
```

```

title(strcat(['p = .5, SNR=' num2str(snrpqn) 'dB']))
subplot(2,1,2);plot(xestpqn - x0);
title('difference')

```

Warning: Size vector should be a row vector with integer elements.

Warning: Integer operands are required for colon operator when used as index

=====

SPGL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

=====

No. rows	:	6400	No. columns	:	34341
Initial tau	:	7.83e+02	Two-norm of b	:	4.85e+01
Optimality tol	:	1.00e-04	Target one-norm of x	:	7.83e+02
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	4.8473426e+01	2.3530628e+01	3.53e+01	0.0	0	0
1	3.8537850e+01	4.5191266e+01	4.20e+01	-0.3	3346	0
2	2.2568898e+01	1.8383026e+01	5.94e+00	0.0	21858	0
3	2.1812541e+01	9.3218602e+00	2.87e+00	0.0	24978	0
4	2.1057035e+01	9.5871038e+00	2.77e+00	0.0	28147	0
5	1.1343040e+01	2.0587624e+01	1.93e+00	0.0	28375	0
6	1.2853010e+01	4.1121683e+01	4.03e+00	-0.3	29387	0
7	1.0602782e+01	2.2240661e+01	1.79e+00	0.0	29501	0
8	9.9600604e+00	1.4103342e+01	9.69e-01	0.0	29655	0
9	9.8458671e+00	1.4106101e+01	9.52e-01	0.0	29971	0
10	8.7488770e+00	4.5760240e+01	2.55e+00	0.0	25271	0
11	7.5207511e+00	4.8964082e+01	1.82e+00	-0.3	26412	0
12	7.2270650e+00	2.0249153e+01	7.96e-01	0.0	26542	0
13	7.1547943e+00	2.0011615e+01	7.65e-01	0.0	26240	0
14	7.0652635e+00	1.9097268e+01	7.21e-01	0.0	25941	0
15	6.6608121e+00	6.2012785e+01	1.82e+00	0.0	23592	0
16	6.6114770e+00	6.9965042e+01	2.08e+00	-0.3	24018	0
17	6.3866286e+00	1.3608569e+01	4.47e-01	0.0	23597	0
18	6.3616494e+00	1.3731490e+01	4.52e-01	0.0	23500	0
19	6.2011657e+00	1.3803580e+01	4.34e-01	0.0	22849	0
20	5.9956172e+00	6.6294314e+01	1.60e+00	-0.3	22646	0
21	6.3130428e+00	1.0325022e+02	2.72e+00	-0.3	23851	0
22	5.7417208e+00	1.6426191e+01	4.28e-01	0.0	22849	0
23	5.7164687e+00	1.4188364e+01	3.82e-01	0.0	22835	0
24	5.6713233e+00	1.4416851e+01	3.82e-01	0.0	22560	0
25	5.3712634e+00	1.4563790e+02	2.72e+00	0.0	15876	0
26	4.9767549e+00	1.8617321e+02	3.02e+00	-0.3	17662	0
27	4.2019656e+00	7.0908794e+01	8.45e-01	0.0	17797	0
28	4.1079321e+00	1.3642312e+01	2.03e-01	0.0	17690	0
29	4.0916841e+00	1.4161121e+01	2.09e-01	0.0	17629	0
30	4.0043491e+00	1.4729726e+01	2.08e-01	0.0	17289	0
31	4.0079473e+00	2.8568521e+01	3.49e-01	-0.3	17291	0
32	3.9993718e+00	3.8099895e+01	4.46e-01	0.0	17277	0
33	3.9518090e+00	1.4617666e+01	2.02e-01	0.0	17211	0
34	3.9439859e+00	1.3729599e+01	1.93e-01	0.0	17176	0
35	3.9070817e+00	1.3790623e+01	1.91e-01	0.0	16991	0

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36	3.8657334e+00	1.7695965e+02	1.72e+00	-0.3	15332	0
37	3.5502855e+00	1.0664892e+02	9.21e-01	-0.3	16299	0
38	3.4640386e+00	1.9722902e+01	2.01e-01	0.0	16016	0
39	3.4544414e+00	1.4640677e+01	1.64e-01	0.0	15987	0
40	3.4328723e+00	1.4893347e+01	1.64e-01	0.0	15785	0
41	3.4105214e+00	5.6610881e+01	4.75e-01	-0.3	15685	0
42	3.3895194e+00	2.5283875e+01	2.37e-01	-0.3	15545	0
43	3.3803968e+00	1.4753636e+01	1.58e-01	0.0	15542	0
44	3.3694063e+00	1.4694538e+01	1.57e-01	0.0	15489	0
45	3.3415513e+00	1.0733180e+02	8.15e-01	-0.3	15212	0
46	3.3323763e+00	1.0828920e+02	8.18e-01	-0.3	15223	0
47	3.2909015e+00	1.7228179e+01	1.68e-01	0.0	15189	0
48	3.2870058e+00	1.4673106e+01	1.50e-01	0.0	15172	0
49	3.2544953e+00	1.4681662e+01	1.48e-01	0.0	15032	0
50	3.2277702e+00	1.1673988e+02	8.22e-01	-0.3	15035	0
51	3.2310582e+00	1.3275308e+02	9.34e-01	-0.3	15089	0
52	3.1839951e+00	2.5514360e+01	2.12e-01	0.0	15034	0
53	3.1795105e+00	1.4723946e+01	1.42e-01	0.0	15019	0
54	3.1664774e+00	1.4629162e+01	1.41e-01	0.0	14971	0
55	3.1613620e+00	4.4876397e+02	2.90e+00	0.0	13714	0
56	2.7910824e+00	7.1680209e+01	4.02e-01	-0.3	14024	0
57	2.7686008e+00	1.5646934e+01	1.17e-01	0.0	14038	0
58	2.7627569e+00	1.5934514e+01	1.18e-01	0.0	14031	0
59	2.7469229e+00	5.0742330e+01	2.81e-01	0.0	13831	0
60	2.7091473e+00	2.8579830e+01	1.76e-01	-0.3	13784	0
61	2.7008879e+00	1.4925035e+01	1.08e-01	0.0	13794	0
62	2.6956717e+00	1.4495942e+01	1.07e-01	0.0	13776	0
63	2.6674138e+00	3.0576382e+01	1.76e-01	0.0	13675	0
64	2.6727811e+00	1.4834323e+02	7.21e-01	-0.3	13685	0
65	2.6728236e+00	1.7590501e+02	8.35e-01	0.0	13661	0
66	2.6487559e+00	2.9387188e+01	1.71e-01	0.0	13647	0
67	2.6462039e+00	1.4516372e+01	1.03e-01	0.0	13642	0
68	2.6369683e+00	1.4604786e+01	1.04e-01	0.0	13617	0
69	2.6052885e+00	5.1994261e+02	2.28e+00	-0.3	13041	0
70	2.4097635e+00	1.3200736e+02	5.29e-01	-0.3	13190	0
71	2.3937613e+00	1.6729290e+01	9.57e-02	0.0	13161	0
72	2.3896486e+00	1.6388530e+01	9.46e-02	0.0	13153	0
73	2.3798319e+00	6.5930705e+01	2.72e-01	0.0	13101	0
74	2.3537867e+00	4.3409414e+01	1.89e-01	-0.3	13053	0
75	2.3479500e+00	1.7245840e+01	9.45e-02	0.0	13063	0
76	2.3441978e+00	1.5482635e+01	8.84e-02	0.0	13052	0
77	2.3252842e+00	6.1392314e+01	2.45e-01	0.0	12989	0
78	2.3277887e+00	1.9079338e+02	6.97e-01	-0.3	12989	0
79	2.3198447e+00	1.1711595e+02	4.34e-01	0.0	12976	0
80	2.3141069e+00	2.0931047e+01	1.05e-01	0.0	12972	0
81	2.3123993e+00	1.4963929e+01	8.45e-02	0.0	12973	0
82	2.2886249e+00	4.9834773e+01	2.00e-01	0.0	12913	0
83	2.2956236e+00	2.6871921e+02	9.33e-01	-0.3	12918	0
84	2.2800863e+00	1.5111475e+02	5.36e-01	-0.3	12915	0
85	2.2737516e+00	1.5034598e+01	8.24e-02	0.0	12912	0
86	2.2722063e+00	1.5025517e+01	8.24e-02	0.0	12907	0
87	2.2108226e+00	4.7710114e+01	1.81e-01	0.0	12797	0
88	2.2273722e+00	1.9258588e+02	6.43e-01	-0.3	12847	0
89	2.2129538e+00	1.4692854e+02	4.90e-01	0.0	12808	0

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90	2.1982918e+00	1.5150317e+01	7.84e-02	0.0	12805	0
91	2.1968306e+00	1.5192771e+01	7.84e-02	0.0	12803	0
92	2.1695882e+00	4.0008869e+01	1.53e-01	0.0	12760	0
93	2.1717905e+00	1.1645083e+02	3.79e-01	-0.3	12772	0
94	2.1740244e+00	1.6376585e+02	5.27e-01	0.0	12762	0
95	2.1581005e+00	1.5712600e+01	7.77e-02	0.0	12744	0
96	2.1566078e+00	1.5587137e+01	7.74e-02	0.0	12744	0
97	2.1505152e+00	1.5543994e+01	7.69e-02	0.0	12725	0
98	2.0775316e+00	4.6199770e+02	1.30e+00	-0.3	12213	0
99	2.1019440e+00	4.9685219e+02	1.43e+00	-0.3	12563	0
100	1.9249520e+00	6.7448759e+01	1.86e-01	0.0	12355	0
101	1.9190741e+00	1.6366303e+01	6.57e-02	0.0	12363	0
102	1.9156933e+00	1.6498482e+01	6.59e-02	0.0	12366	0
103	1.9147386e+00	1.4848198e+02	3.74e-01	0.0	12264	0
104	1.8827390e+00	7.5938856e+01	1.99e-01	-0.3	12255	0
105	1.8711423e+00	1.8421013e+01	6.74e-02	0.0	12244	0
106	1.8693148e+00	1.6259020e+01	6.28e-02	0.0	12241	0
107	1.8607571e+00	2.0765455e+01	7.23e-02	0.0	12225	0
108	1.8572496e+00	4.7241370e+01	1.30e-01	-0.3	12231	0
109	1.8569670e+00	7.8013530e+01	1.98e-01	-0.3	12217	0
110	1.8515557e+00	4.0571679e+01	1.15e-01	0.0	12224	0
111	1.8498458e+00	1.6002930e+01	6.11e-02	0.0	12223	0
112	1.8480866e+00	1.6845455e+01	6.28e-02	0.0	12217	0
113	1.8008552e+00	1.9803567e+02	4.35e-01	0.0	12134	0
114	1.8055848e+00	2.7843989e+02	6.06e-01	-0.3	12163	0
115	1.7877715e+00	3.9116158e+01	1.05e-01	0.0	12140	0
116	1.7864775e+00	1.5668290e+01	5.69e-02	0.0	12146	0
117	1.7839604e+00	1.6069732e+01	5.77e-02	0.0	12140	0
118	1.7550489e+00	4.3133465e+02	8.73e-01	0.0	12028	0
119	1.7762721e+00	5.7810298e+02	1.19e+00	-0.3	12093	0
120	1.7138765e+00	5.5658446e+01	1.28e-01	0.0	12049	0
121	1.7121183e+00	1.7228948e+01	5.63e-02	0.0	12053	0
122	1.7092003e+00	2.1462753e+01	6.41e-02	0.0	12046	0
123	1.7045185e+00	1.9803799e+02	3.89e-01	-0.3	12021	0
124	1.6902453e+00	1.3510053e+02	2.72e-01	-0.3	12015	0
125	1.6783066e+00	1.5891618e+01	5.16e-02	0.0	11996	0
126	1.6770444e+00	1.6036446e+01	5.21e-02	0.0	11991	0
127	1.6706343e+00	1.6066631e+01	5.20e-02	0.0	11970	0
128	1.6669193e+00	1.2234663e+02	2.40e-01	-0.3	11965	0
129	1.6631443e+00	3.3611678e+01	8.23e-02	-0.3	11956	0
130	1.6616423e+00	2.3345606e+01	6.43e-02	0.0	11953	0
131	1.6598111e+00	1.6583989e+01	5.23e-02	0.0	11951	0
132	1.6482397e+00	1.6486435e+02	3.10e-01	0.0	11931	0
133	1.6531734e+00	2.5824480e+02	4.73e-01	-0.3	11938	0
134	1.6416022e+00	4.9546348e+01	1.08e-01	0.0	11926	0
135	1.6407082e+00	1.6984699e+01	5.20e-02	0.0	11924	0
136	1.6386977e+00	1.9673219e+01	5.66e-02	0.0	11920	0
137	1.5978696e+00	7.9775664e+02	1.32e+00	0.0	11674	0
138	1.5133623e+00	1.7065973e+02	2.72e-01	-0.3	11709	0
139	1.5066255e+00	1.7717275e+01	4.63e-02	0.0	11716	0
140	1.5054374e+00	1.7832216e+01	4.65e-02	0.0	11715	0
141	1.5000330e+00	8.4220956e+01	1.41e-01	0.0	11679	0
142	1.5006001e+00	1.0790297e+02	1.76e-01	-0.3	11667	0
143	1.4889412e+00	2.9150690e+01	6.15e-02	0.0	11671	0

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144	1.4875976e+00	1.7924348e+01	4.57e-02	0.0	11670	0
145	1.4861403e+00	1.8295087e+01	4.62e-02	0.0	11668	0
146	1.4713348e+00	2.5198656e+02	3.69e-01	0.0	11619	0
147	1.4504231e+00	1.0983043e+02	1.68e-01	-0.3	11639	0
148	1.4456215e+00	2.5129999e+01	5.34e-02	0.0	11612	0
149	1.4445042e+00	1.7260868e+01	4.28e-02	0.0	11613	0
150	1.4373655e+00	3.8858877e+01	7.05e-02	0.0	11604	0
151	1.4374448e+00	6.1121651e+01	1.01e-01	-0.3	11603	0
152	1.4337137e+00	2.8335650e+01	5.66e-02	0.0	11602	0
153	1.4323330e+00	1.6819761e+01	4.16e-02	0.0	11607	0
154	1.4313679e+00	1.7311584e+01	4.22e-02	0.0	11606	0
155	1.4175555e+00	9.9552439e+01	1.48e-01	0.0	11607	0
156	1.4274257e+00	2.3120641e+02	3.19e-01	-0.3	11610	0
157	1.4134238e+00	7.0320352e+01	1.09e-01	0.0	11609	0
158	1.4120050e+00	1.7062790e+01	4.10e-02	0.0	11608	0
159	1.4112584e+00	1.7148782e+01	4.11e-02	0.0	11607	0
160	1.3933978e+00	3.5095778e+02	4.68e-01	0.0	11515	0
161	1.3648860e+00	1.0137489e+02	1.49e-01	-0.3	11575	0
162	1.3607236e+00	2.0367947e+01	4.48e-02	0.0	11534	0
163	1.3598301e+00	1.9124615e+01	4.31e-02	0.0	11537	0
164	1.3530774e+00	4.6461149e+01	7.63e-02	0.0	11517	0
165	1.3572871e+00	1.0953492e+02	1.60e-01	-0.3	11507	0
166	1.3484533e+00	3.0113719e+01	5.65e-02	0.0	11516	0
167	1.3471353e+00	1.6354297e+01	3.92e-02	0.0	11513	0
168	1.3462724e+00	1.6301940e+01	3.91e-02	0.0	11514	0
169	1.3312356e+00	2.5543057e+02	3.46e-01	0.0	11426	0
170	1.3432003e+00	3.3416724e+02	4.43e-01	-0.3	11555	0
171	1.3045360e+00	4.5968973e+01	7.63e-02	0.0	11423	0
172	1.3030739e+00	1.6395910e+01	3.87e-02	0.0	11423	0
173	1.3015383e+00	1.9319724e+01	4.24e-02	0.0	11425	0
174	1.3026983e+00	1.5358523e+02	2.12e-01	-0.3	11418	0
175	1.2876157e+00	3.7303982e+01	6.54e-02	-0.3	11403	0
176	1.2858164e+00	1.6052713e+01	3.77e-02	0.0	11403	0
177	1.2843724e+00	1.5127959e+01	3.66e-02	0.0	11408	0
178	1.2754488e+00	8.7215295e+01	1.29e-01	0.0	11385	0
179	1.2788498e+00	1.2011951e+02	1.71e-01	-0.3	11379	0
180	1.2698176e+00	4.4301225e+01	7.35e-02	0.0	11381	0
181	1.2686276e+00	1.4688467e+01	3.58e-02	0.0	11382	0
182	1.2677842e+00	1.4728677e+01	3.59e-02	0.0	11379	0
183	1.2615252e+00	2.1709350e+02	2.95e-01	0.0	11362	0
184	1.2401509e+00	5.4140318e+01	8.67e-02	-0.3	11343	0
185	1.2373950e+00	2.1205580e+01	4.39e-02	0.0	11341	0
186	1.2363291e+00	1.5039722e+01	3.59e-02	0.0	11343	0
187	1.2310677e+00	4.7002075e+01	7.62e-02	0.0	11325	0
188	1.2312556e+00	6.3745549e+01	9.85e-02	-0.3	11320	0
189	1.2268941e+00	2.4327655e+01	4.74e-02	0.0	11323	0
190	1.2259164e+00	1.4235935e+01	3.47e-02	0.0	11322	0
191	1.2249605e+00	1.4337665e+01	3.48e-02	0.0	11324	0
192	1.2077607e+00	1.5371689e+02	2.14e-01	0.0	11275	0
193	1.2254228e+00	3.0732741e+02	4.07e-01	-0.3	11354	0
194	1.1973304e+00	4.9047370e+01	7.86e-02	0.0	11278	0
195	1.1961615e+00	1.4131151e+01	3.40e-02	0.0	11277	0
196	1.1952897e+00	1.5155652e+01	3.53e-02	0.0	11279	0
197	1.1893650e+00	1.0572103e+02	1.51e-01	-0.3	11277	0

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198	1.1882442e+00	1.3273971e+02	1.86e-01	-0.3	11268	0
199	1.1827658e+00	1.9636647e+01	4.08e-02	0.0	11276	0
200	1.1822235e+00	1.3589648e+01	3.32e-02	0.0	11274	0

ERROR EXIT -- Too many iterations

Products with A	:	302	Total time (secs)	:	141.3
Products with A'	:	201	Project time (secs)	:	1.5
Newton iterations	:	0	Mat-vec time (secs)	:	137.6
Line search its	:	228	Subspace iterations	:	0

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PQNL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

=====

No. rows	:	6400	No. columns	:	34341
Initial tau	:	7.83e+02	Two-norm of b	:	4.85e+01
Optimality tol	:	1.00e-04	Target one-norm of x	:	7.83e+02
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	4.8473426e+01	2.3530628e+01	3.53e+01	0.0	0	0

Inside of minConf\_PQN

Iteration	FunEvals	Projections	Step Length	rNorm2	O
1	1	4	1.56250e-02	4.55051e+01	7.941
2	1	25	1.00000e+00	2.25252e+01	9.926
3	1	38	1.00000e+00	2.20590e+01	9.981
4	1	85	1.00000e+00	1.09214e+01	1.272
5	1	173	5.00000e-01	1.02592e+01	1.475
6	1	235	1.00000e+00	8.96509e+00	1.311
7	1	298	1.00000e+00	7.64398e+00	8.251
8	1	372	1.00000e+00	7.41347e+00	6.824
9	1	465	1.00000e+00	6.91415e+00	8.448
10	1	568	1.00000e+00	6.55968e+00	9.205
11	1	669	1.00000e+00	5.96937e+00	8.304
12	1	785	1.00000e+00	5.59737e+00	5.982
13	1	945	1.00000e+00	5.43657e+00	6.239
14	1	1104	1.00000e+00	5.11057e+00	6.900
15	1	1241	1.00000e+00	4.82083e+00	7.170
16	1	1396	1.00000e+00	4.60998e+00	6.054
17	1	1584	1.00000e+00	4.44299e+00	6.113
18	1	1763	1.00000e+00	4.30432e+00	6.110
19	1	1922	1.00000e+00	4.11666e+00	5.764
20	1	2110	1.00000e+00	3.95816e+00	5.188
21	1	2261	1.00000e+00	3.83645e+00	5.491
22	1	2412	1.00000e+00	3.72253e+00	5.868
23	1	2623	1.00000e+00	3.59509e+00	5.632
24	1	2855	1.00000e+00	3.47464e+00	5.309
25	1	3028	1.00000e+00	3.36765e+00	5.059
26	1	3304	1.00000e+00	3.26697e+00	4.621
27	1	3605	1.00000e+00	3.16869e+00	4.519
28	1	3859	1.00000e+00	3.07232e+00	4.274
29	1	4189	1.00000e+00	2.97912e+00	4.105
30	1	4458	1.00000e+00	2.88388e+00	4.047

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31	1	4760	1.00000e+00	2.79648e+00	3.912
32	1	5098	1.00000e+00	2.71513e+00	3.601
33	1	5404	1.00000e+00	2.63659e+00	3.626
34	1	5751	1.00000e+00	2.56081e+00	3.328
35	1	6134	1.00000e+00	2.48149e+00	3.035
36	1	6513	1.00000e+00	2.40336e+00	2.738
37	1	6675	1.00000e+00	2.33315e+00	2.389
38	1	7037	1.00000e+00	2.25900e+00	2.325
39	1	7421	1.00000e+00	2.18858e+00	2.347
40	1	7895	1.00000e+00	2.11271e+00	2.283
41	1	8196	1.00000e+00	2.04697e+00	2.101
42	1	8613	1.00000e+00	1.98636e+00	1.822
43	1	8976	1.00000e+00	1.92278e+00	1.683
44	1	9408	1.00000e+00	1.86476e+00	1.838
45	1	9876	1.00000e+00	1.80860e+00	1.686
46	1	10258	1.00000e+00	1.74161e+00	1.291
47	1	10698	1.00000e+00	1.69591e+00	1.571
48	1	11109	1.00000e+00	1.65299e+00	1.686
49	1	11509	1.00000e+00	1.58465e+00	1.596
50	1	11942	1.00000e+00	1.54381e+00	1.411
51	1	12305	1.00000e+00	1.51437e+00	1.523
52	1	12687	1.00000e+00	1.47349e+00	1.415
53	1	13061	1.00000e+00	1.43320e+00	1.302
54	1	13451	1.00000e+00	1.40144e+00	1.487
55	1	13796	1.00000e+00	1.37448e+00	1.599
56	1	14176	1.00000e+00	1.33762e+00	1.433
57	1	14494	1.00000e+00	1.30636e+00	1.284
58	1	14630	1.00000e+00	1.28667e+00	1.295
59	1	14933	1.00000e+00	1.26310e+00	1.466
60	1	15120	1.00000e+00	1.23891e+00	1.435
61	1	15578	1.00000e+00	1.20834e+00	1.300
62	1	15831	1.00000e+00	1.18680e+00	1.188
63	1	16213	1.00000e+00	1.16189e+00	1.329
64	1	16564	1.00000e+00	1.14194e+00	1.384
65	1	16665	1.00000e+00	1.12283e+00	1.176
66	1	17009	1.00000e+00	1.10074e+00	1.084
67	1	17553	1.00000e+00	1.07711e+00	1.118
68	1	18124	1.00000e+00	1.05378e+00	1.128
69	1	18395	1.00000e+00	1.03225e+00	1.040
70	1	18590	1.00000e+00	1.01218e+00	1.021
71	1	18973	1.00000e+00	9.94870e-01	1.029
72	1	19466	1.00000e+00	9.72365e-01	1.019
73	1	19943	1.00000e+00	9.51929e-01	9.589
74	1	20449	1.00000e+00	9.31358e-01	8.973
75	1	20628	1.00000e+00	9.15572e-01	8.583
76	1	20810	1.00000e+00	9.00027e-01	8.447
77	1	20892	1.00000e+00	8.87117e-01	7.160
78	1	21226	1.00000e+00	8.67131e-01	6.510
79	1	21525	1.00000e+00	8.49961e-01	6.119
80	1	21733	1.00000e+00	8.34404e-01	6.577
81	1	22158	1.00000e+00	8.15160e-01	7.054
82	1	22504	1.00000e+00	7.96806e-01	6.912
83	1	22999	1.00000e+00	7.74945e-01	5.552
84	1	23219	1.00000e+00	7.61269e-01	4.685

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85	1	23481	1.00000e+00	7.47444e-01	4.599
86	1	23915	1.00000e+00	7.30715e-01	5.030
87	1	24207	1.00000e+00	7.16267e-01	5.155
88	1	24315	1.00000e+00	7.06997e-01	4.238
89	1	24643	1.00000e+00	6.91860e-01	3.694
90	1	24751	1.00000e+00	6.83925e-01	4.296
91	1	25330	1.00000e+00	6.67656e-01	5.340
92	1	25726	1.00000e+00	6.51990e-01	4.921
93	1	25830	1.00000e+00	6.41060e-01	4.045
94	1	26282	1.00000e+00	6.30029e-01	4.230
95	1	26620	1.00000e+00	6.18429e-01	4.251
96	1	26979	1.00000e+00	6.04860e-01	4.895
97	1	27186	1.00000e+00	5.97094e-01	4.831
98	1	27393	1.00000e+00	5.88850e-01	4.296
99	1	27459	1.00000e+00	5.83516e-01	3.368
100	1	27830	1.00000e+00	5.72152e-01	4.364
101	1	27981	1.00000e+00	5.66917e-01	4.897
102	1	28034	1.00000e+00	5.62111e-01	4.225
103	1	28663	1.00000e+00	5.48795e-01	3.800
104	1	28958	1.00000e+00	5.37771e-01	3.815
105	1	29318	1.00000e+00	5.28649e-01	4.720
106	1	29508	1.00000e+00	5.23112e-01	5.259
107	1	29851	1.00000e+00	5.12709e-01	4.335
108	1	30077	1.00000e+00	5.02034e-01	3.080
109	1	30109	1.00000e+00	4.99001e-01	2.463
110	1	30258	1.00000e+00	4.94599e-01	3.363
111	1	30597	1.00000e+00	4.87514e-01	3.836
112	1	30868	1.00000e+00	4.75254e-01	3.195
113	1	31320	1.00000e+00	4.62026e-01	4.323
114	1	31509	1.00000e+00	4.57151e-01	3.070
115	1	31606	1.00000e+00	4.53317e-01	3.194
116	1	31706	1.00000e+00	4.49465e-01	3.194
117	1	31827	1.00000e+00	4.44382e-01	2.546
118	1	32254	1.00000e+00	4.35941e-01	2.955
119	1	32361	1.00000e+00	4.32383e-01	3.084
120	1	32441	1.00000e+00	4.28018e-01	3.192
121	1	32831	1.00000e+00	4.18937e-01	3.130
122	1	33048	1.00000e+00	4.12727e-01	2.205
123	1	33194	1.00000e+00	4.08129e-01	2.212
124	1	33407	1.00000e+00	4.03962e-01	2.760
125	1	33465	1.00000e+00	4.01595e-01	2.724
126	1	33805	1.00000e+00	3.94848e-01	3.256
127	1	33987	1.00000e+00	3.90790e-01	3.290
128	1	34085	1.00000e+00	3.86946e-01	2.809
129	1	34481	1.00000e+00	3.80458e-01	2.609
130	1	34627	1.00000e+00	3.76346e-01	2.328
131	1	34734	1.00000e+00	3.73354e-01	1.792
132	1	34913	1.00000e+00	3.69400e-01	1.981
133	1	35152	1.00000e+00	3.64217e-01	1.871
134	1	35445	1.00000e+00	3.56804e-01	1.809
135	1	35496	1.00000e+00	3.54577e-01	1.993
136	1	35580	1.00000e+00	3.52461e-01	2.297
137	1	35773	1.00000e+00	3.48774e-01	2.284
138	1	35804	1.00000e+00	3.46836e-01	1.308

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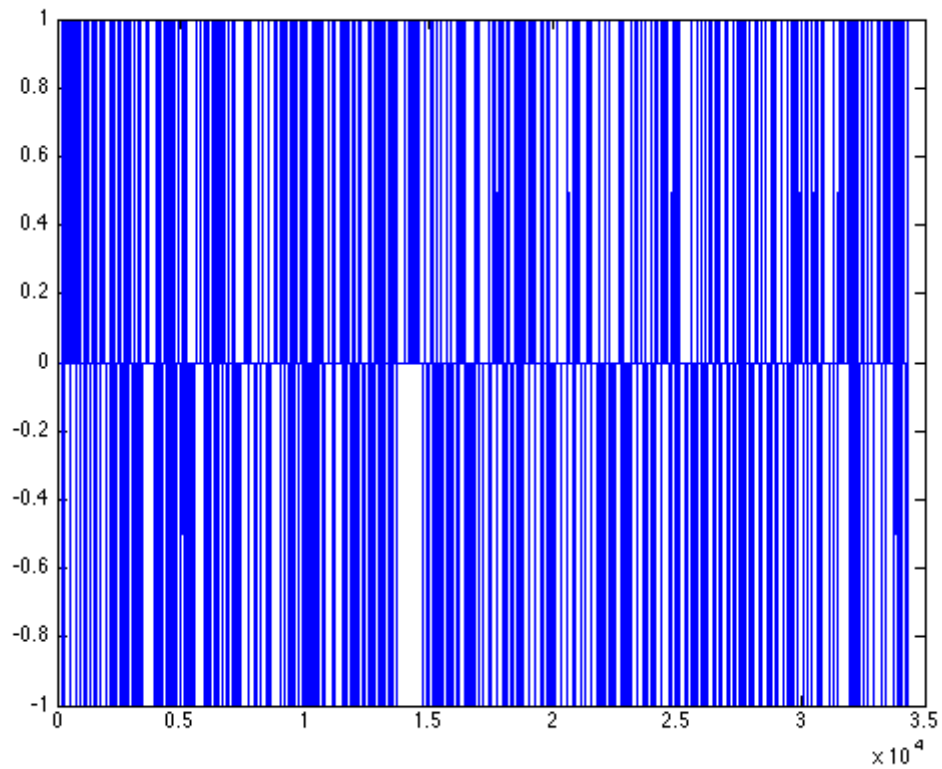
139	1	35843	1.00000e+00	3.45583e-01	1.218
140	1	36083	1.00000e+00	3.41373e-01	1.861
141	1	36217	1.00000e+00	3.37511e-01	1.887
142	1	36527	1.00000e+00	3.25979e-01	2.245
143	1	36654	1.00000e+00	3.21873e-01	1.581
144	1	36721	1.00000e+00	3.20225e-01	1.471
145	1	36853	1.00000e+00	3.16816e-01	1.733
146	1	36892	1.00000e+00	3.15531e-01	1.361
147	1	37022	1.00000e+00	3.12488e-01	1.414
148	1	37227	1.00000e+00	3.09044e-01	1.618
149	1	37421	1.00000e+00	3.04488e-01	1.668
150	1	37440	1.00000e+00	3.03476e-01	1.048
151	1	37691	1.00000e+00	2.99534e-01	1.591
152	1	37796	1.00000e+00	2.97118e-01	1.969
153	1	37846	1.00000e+00	2.95865e-01	1.523
154	1	37865	1.00000e+00	2.95073e-01	8.160
155	1	38108	1.00000e+00	2.90861e-01	1.306
156	1	38264	1.00000e+00	2.87537e-01	1.396
157	1	38484	1.00000e+00	2.80346e-01	1.774
158	1	38712	1.00000e+00	2.76547e-01	1.319
159	1	38751	1.00000e+00	2.75130e-01	1.479
160	1	38767	1.00000e+00	2.74531e-01	1.588
161	1	38852	1.00000e+00	2.72539e-01	1.723
162	1	38940	1.00000e+00	2.70279e-01	1.473
163	1	38994	1.00000e+00	2.68248e-01	9.600
164	1	39257	1.00000e+00	2.64056e-01	1.213
165	1	39361	1.00000e+00	2.61713e-01	1.406
166	1	39416	1.00000e+00	2.60254e-01	1.149
167	1	39657	1.00000e+00	2.56029e-01	1.274
168	1	39663	1.00000e+00	2.55658e-01	6.620
169	1	39802	1.00000e+00	2.53551e-01	8.037
170	1	40005	1.00000e+00	2.49918e-01	1.064
171	1	40114	1.00000e+00	2.47175e-01	1.171
172	1	40369	1.00000e+00	2.42055e-01	1.079
173	1	40462	1.00000e+00	2.39705e-01	9.836
174	1	40583	1.00000e+00	2.37726e-01	1.204
175	1	40635	1.00000e+00	2.36636e-01	1.311
176	1	40706	1.00000e+00	2.35477e-01	1.582
177	1	40766	1.00000e+00	2.34511e-01	1.263
178	1	40816	1.00000e+00	2.33320e-01	8.605
179	1	40916	1.00000e+00	2.31762e-01	9.873
180	1	40929	1.00000e+00	2.31271e-01	6.420
181	1	40937	1.00000e+00	2.31133e-01	7.389
182	1	40999	1.00000e+00	2.30140e-01	8.228
183	1	41248	1.00000e+00	2.26151e-01	1.062
184	1	41323	1.00000e+00	2.24172e-01	1.184
185	1	41547	1.00000e+00	2.20260e-01	1.077
186	1	41617	1.00000e+00	2.18432e-01	7.235
187	1	41676	1.00000e+00	2.17300e-01	9.197
188	1	41710	1.00000e+00	2.16708e-01	1.135
189	1	41732	1.00000e+00	2.16400e-01	1.068
190	1	41760	1.00000e+00	2.15992e-01	1.004
191	1	41840	1.00000e+00	2.14713e-01	7.328
192	1	41881	1.00000e+00	2.14002e-01	4.807

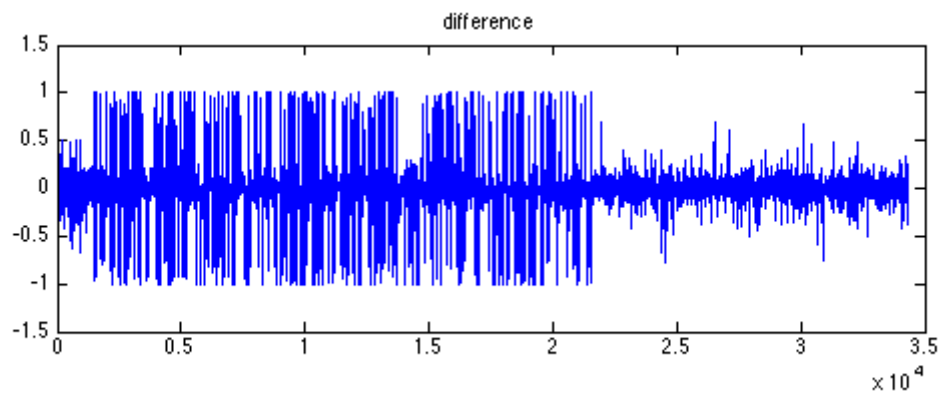
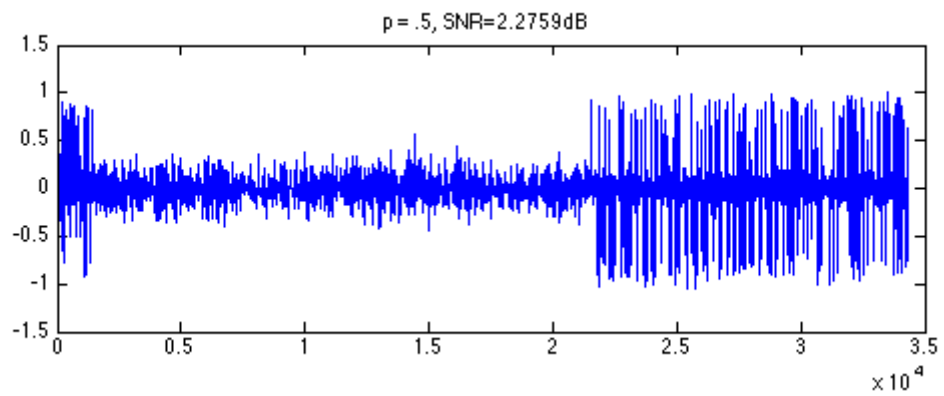
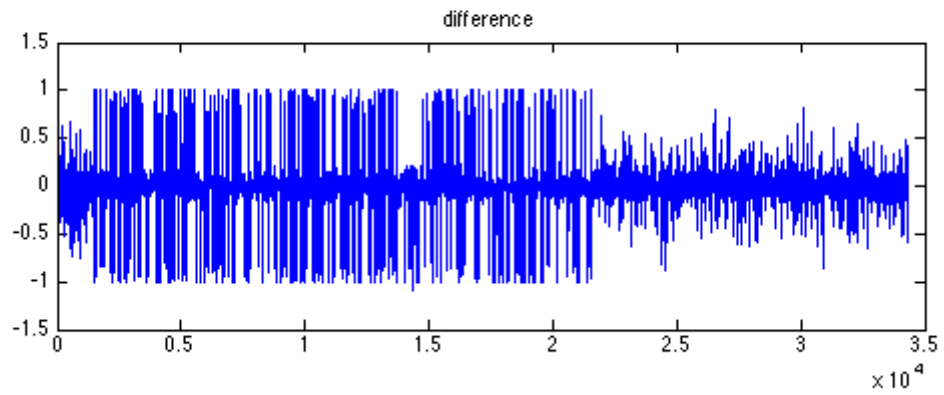
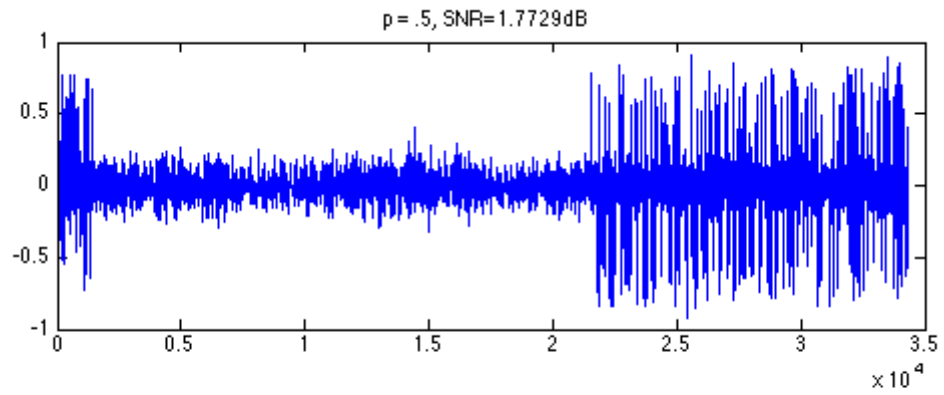
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193	1	41948	1.00000e+00	2.13011e-01	7.268
194	1	42003	1.00000e+00	2.12432e-01	7.925
195	1	42212	1.00000e+00	2.09728e-01	1.045
196	1	42401	1.00000e+00	2.07358e-01	9.837
197	1	42642	1.00000e+00	2.01935e-01	7.404
198	1	42770	1.00000e+00	1.99729e-01	6.943
199	1	42791	1.00000e+00	1.99319e-01	8.410
200	1	42833	1.00000e+00	1.98722e-01	7.079
200	1.9872245e-01	4.9354830e+00	8.40e-03	0.0	11323
ERROR EXIT -- Too many iterations					

Products with A	:	209	Total time (secs)	:	2254.2
Products with A'	:	209	Project time (secs)	:	1512.5
Newton iterations	:	0	Mat-vec time (secs)	:	91.7





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## if given known compressible vector

```
nn = linspace(0,1,n);
x0_compress = exp(-nn.^1);
x0_compress = x0_compress - min(x0_compress);
figure;plot(x0_compress)
x0_compress = x0_compress(:);
b_compress = A*x0_compress + 0.005 * randn(m,1);

tau = norm(x0_compress,1);

options = spgSetParms('optTol', 1e-4, 'iterations', 200);%, 'fid', fid);
xinit = zeros(size(A,2),1);

xestspg = spg11(A,b_compress,tau,[],xinit,options);
xestpqn = pqn11_2(A,b_compress,tau,[],xinit,options);
snrspg = SNR(x0_compress,xestspg);
snrpqn = SNR(x0_compress,xestpqn);

figure('Name','compressible vector SPG');
subplot(2,1,1);plot(xestspg);
title(strcat(['p = .5, SNR=' num2str(snrspg) 'dB']))
subplot(2,1,2);plot(xestspg - x0_compress);
title('difference')

figure('Name','compressible vector PQN');
subplot(2,1,1);plot(xestpqn);
title(strcat(['p = .5, SNR=' num2str(snrpqn) 'dB']))
subplot(2,1,2);plot(xestpqn - x0_compress);
title('difference')
```

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SPGL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

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No. rows	:	6400	No. columns	:	34341
Initial tau	:	1.25e+03	Two-norm of b	:	1.02e+02
Optimality tol	:	1.00e-04	Target one-norm of x	:	1.25e+03
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	1.0242621e+02	1.4109450e+01	5.91e+01	0.0	0	0
1	4.6200614e+01	7.1789273e+01	5.66e+01	-0.3	1445	0
2	3.3834297e+00	5.2846978e+02	2.53e+00	0.0	21288	0
3	2.7257438e+00	1.3445067e+02	3.95e-01	0.0	21310	0
4	2.6595635e+00	1.3761276e+02	3.85e-01	0.0	21442	0
5	1.4029781e+00	1.4850790e+02	1.18e-01	0.0	22871	0
6	1.0248170e+00	1.5089421e+02	1.21e-01	0.0	23088	0
7	8.2720743e-01	6.3692830e+02	4.84e-01	0.0	23403	0
8	1.1331424e+00	1.2758462e+03	1.07e+00	-0.3	23436	0
9	7.1411305e-01	7.2608230e+01	5.69e-02	0.0	23410	0
10	7.1035669e-01	5.9629071e+01	4.75e-02	0.0	23404	0

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11	6.7649366e-01	5.9419962e+01	4.74e-02	0.0	23383	0
12	4.5113815e-01	1.1105173e+02	9.18e-02	0.0	23897	0
13	5.4371289e-01	5.5546540e+02	4.22e-01	-0.3	23907	0
14	4.6785843e-01	3.0366367e+02	2.55e-01	0.0	23944	0
15	4.2021515e-01	3.6221046e+01	2.89e-02	0.0	23936	0
16	4.1835879e-01	3.7532772e+01	3.00e-02	0.0	23944	0
17	3.7284735e-01	1.7003911e+01	1.35e-02	0.0	24097	0
18	3.4069618e-01	1.0190760e+02	8.51e-02	0.0	24235	0
19	3.5599241e-01	2.1192710e+02	1.61e-01	-0.3	24231	0
20	3.3154485e-01	4.1285221e+01	3.39e-02	0.0	24234	0
21	3.3033368e-01	2.4033336e+01	1.92e-02	0.0	24238	0
22	3.2796475e-01	2.4197295e+01	1.94e-02	0.0	24235	0
23	2.9731228e-01	5.3738538e+01	4.12e-02	0.0	24360	0
24	3.0538888e-01	1.3507060e+02	1.14e-01	-0.3	24369	0
25	2.9281278e-01	7.3700135e+01	5.63e-02	0.0	24365	0
26	2.8915538e-01	1.6419080e+01	1.32e-02	0.0	24368	0
27	2.8819453e-01	1.3937909e+01	1.11e-02	0.0	24369	0
28	2.6754616e-01	2.6863962e+01	2.19e-02	0.0	24434	0
29	2.7595529e-01	1.4978154e+02	1.14e-01	-0.3	24461	0
30	2.6939481e-01	1.0393266e+02	8.75e-02	-0.3	24461	0
31	2.5957077e-01	1.4309285e+01	1.14e-02	0.0	24466	0
32	2.5913794e-01	1.5463168e+01	1.24e-02	0.0	24469	0
33	2.2766886e-01	1.1711826e+01	9.24e-03	0.0	24531	0
34	2.2212234e-01	7.4302246e+01	6.25e-02	-0.3	24579	0
35	2.3984780e-01	1.7451809e+02	1.33e-01	-0.3	24570	0
36	2.1513512e-01	1.5374263e+01	1.25e-02	0.0	24577	0
37	2.1479669e-01	1.1662263e+01	9.33e-03	0.0	24579	0
38	2.1200796e-01	1.1540168e+01	9.24e-03	0.0	24585	0
39	1.1027078e-01	1.2558629e+02	9.55e-02	0.0	25055	0
40	1.0615322e-01	1.0615595e+02	8.92e-02	-0.3	25066	0
41	7.7919030e-02	1.0896263e+01	8.58e-03	0.0	25067	0
42	7.6788229e-02	1.1529203e+01	9.17e-03	0.0	25063	0
43	6.2506811e-02	6.1888978e+00	4.90e-03	0.0	25069	0
44	5.8383348e-02	1.8058677e+01	1.51e-02	0.0	25053	0
45	6.8638620e-02	6.4202824e+01	4.88e-02	-0.3	25051	0
46	5.6611626e-02	5.9463715e+00	4.89e-03	0.0	25051	0
47	5.6439014e-02	3.8701387e+00	3.09e-03	0.0	25052	0
48	5.6137128e-02	3.8105465e+00	3.04e-03	0.0	25053	0
49	3.5384138e-02	7.8777530e+00	6.04e-03	0.0	25019	0
50	4.5320540e-02	4.3739821e+01	3.68e-02	-0.3	25028	0
51	3.5505474e-02	1.9712886e+01	1.50e-02	0.0	25026	0
52	3.3468410e-02	1.9070790e+00	1.53e-03	0.0	25026	0
53	3.3358421e-02	1.7788109e+00	1.43e-03	0.0	25029	0
54	3.0346991e-02	2.1559419e+00	1.74e-03	0.0	25028	0
55	2.8269370e-02	7.1535437e+00	5.48e-03	0.0	25030	0
56	3.1893496e-02	2.3762323e+01	2.00e-02	-0.3	25036	0
57	2.7562580e-02	7.3554688e+00	5.63e-03	0.0	25037	0
58	2.7188753e-02	1.6631325e+00	1.33e-03	0.0	25039	0
59	2.7091775e-02	1.5449983e+00	1.24e-03	0.0	25039	0
60	2.5099893e-02	1.8582812e+00	1.51e-03	0.0	25055	0
61	2.5918370e-02	1.9085423e+01	1.45e-02	0.0	25051	0
62	2.3327802e-02	3.5528020e+00	2.96e-03	-0.3	25051	0
63	2.3195966e-02	1.0206084e+00	8.17e-04	0.0	25051	0
64	2.3126815e-02	1.0094488e+00	8.10e-04	0.0	25052	0

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65	2.1384546e-02	1.5815859e+00	1.25e-03	0.0	25072	0
66	2.1052025e-02	5.5571770e+00	4.66e-03	-0.3	25071	0
67	2.0722434e-02	1.9240215e+00	1.49e-03	-0.3	25070	0
68	2.0661170e-02	1.2413837e+00	1.00e-03	0.0	25069	0
69	2.0565049e-02	1.0368888e+00	8.29e-04	0.0	25069	0
70	1.9546350e-02	6.7303606e+00	5.66e-03	0.0	25070	0
71	1.9137834e-02	4.8756070e+00	3.73e-03	-0.3	25070	0
72	1.8912749e-02	9.8582617e-01	7.96e-04	0.0	25070	0
73	1.8866760e-02	8.7540561e-01	7.01e-04	0.0	25070	0
74	1.7862602e-02	1.3330039e+00	1.09e-03	0.0	25078	0
75	1.8484572e-02	1.0311757e+01	7.85e-03	-0.3	25075	0
76	1.8358413e-02	8.3475848e+00	7.04e-03	-0.3	25078	0
77	1.7362029e-02	6.8303480e-01	5.45e-04	0.0	25078	0
78	1.7337303e-02	7.5364936e-01	6.05e-04	0.0	25078	0
79	1.5330795e-02	6.8069653e-01	5.42e-04	0.0	25085	0
80	1.4628323e-02	6.9451579e+00	5.86e-03	-0.3	25086	0
81	1.4571616e-02	8.1318975e+00	6.19e-03	-0.3	25085	0
82	1.3710374e-02	7.3504121e-01	5.94e-04	0.0	25085	0
83	1.3688722e-02	6.5335059e-01	5.25e-04	0.0	25085	0
84	1.2666792e-02	4.9075703e-01	3.96e-04	0.0	25090	0
85	1.3647669e-02	1.2466377e+01	9.50e-03	0.0	25093	0
86	1.1378232e-02	2.2618567e+00	1.87e-03	-0.3	25093	0
87	1.1191936e-02	1.4130303e+00	1.13e-03	0.0	25094	0
88	1.0789277e-02	1.1127997e+00	8.97e-04	0.0	25094	0
89	9.1780136e-03	2.6231178e+00	2.00e-03	0.0	25095	0

EXIT -- Optimal solution found

Products with A	:	132	Total time (secs)	:	47.8
Products with A'	:	90	Project time (secs)	:	0.2
Newton iterations	:	0	Mat-vec time (secs)	:	46.9
Line search its	:	90	Subspace iterations	:	0

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PQNL1\_SLIM v. 46 (Tue, 14 Jun 2011) based on v.1017

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No. rows	:	6400	No. columns	:	34341
Initial tau	:	1.25e+03	Two-norm of b	:	1.02e+02
Optimality tol	:	1.00e-04	Target one-norm of x	:	1.25e+03
Basis pursuit tol	:	1.00e-06	Maximum iterations	:	200

Iter	Objective	Relative Gap	gNorm	stepG	nnzX	nnzG
0	1.0242621e+02	1.4109450e+01	5.91e+01	0.0	0	0

Inside of minConf\_PQN

Iteration	FunEvals	Projections	Step Length	rNorm2	0
1	1	4	1.25000e-01	6.95678e+01	1.409
2	1	35	1.00000e+00	5.45798e+00	1.281
3	1	64	1.00000e+00	5.31752e+00	1.172
4	1	109	1.00000e+00	3.99550e+00	1.073
5	1	174	1.00000e+00	2.84487e+00	1.055
6	1	256	1.00000e+00	1.44585e+00	4.854
7	1	341	1.00000e+00	1.21979e+00	2.819
8	1	420	1.00000e+00	1.17241e+00	3.085

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9	1	515	1.000000e+00	1.06471e+00	2.153
10	1	601	1.000000e+00	9.53322e-01	1.487
11	1	705	1.000000e+00	8.37846e-01	2.322
12	1	1173	1.000000e+00	7.45923e-01	2.423
13	1	1517	1.000000e+00	5.97290e-01	1.399
14	1	1634	1.000000e+00	5.27068e-01	7.220
15	1	1711	1.000000e+00	5.08619e-01	7.872
16	1	1783	1.000000e+00	4.80885e-01	1.260
17	1	1948	5.000000e-01	4.59317e-01	1.576
18	1	2198	1.000000e+00	4.29585e-01	7.368
19	1	2509	1.000000e+00	3.91269e-01	1.158
20	1	2632	1.000000e+00	3.68280e-01	1.035
21	1	2735	1.000000e+00	3.03077e-01	7.654
22	1	3533	1.000000e+00	2.19890e-01	5.594
23	1	3645	1.000000e+00	1.88130e-01	5.310
24	1	3828	1.000000e+00	1.43191e-01	3.188
25	1	3927	1.000000e+00	1.15461e-01	2.341
26	1	4003	1.000000e+00	1.02927e-01	2.447
27	1	4171	1.000000e+00	8.78612e-02	1.733
28	1	4223	1.000000e+00	7.66004e-02	2.420
29	1	4306	5.000000e-01	7.19293e-02	2.804
30	1	4335	1.000000e+00	6.83153e-02	1.499
31	1	4392	1.000000e+00	6.52801e-02	1.416
32	1	4426	1.000000e+00	6.23346e-02	1.218
33	1	4470	1.000000e+00	5.88113e-02	9.536
34	1	4510	1.000000e+00	5.41596e-02	1.188
35	1	4555	1.000000e+00	4.95424e-02	1.107
36	1	4616	1.000000e+00	3.70022e-02	1.344
37	1	4650	1.000000e+00	3.38229e-02	5.947
38	1	4674	1.000000e+00	3.26598e-02	4.163
39	1	4706	1.000000e+00	3.16788e-02	5.209
40	1	4721	1.000000e+00	3.11665e-02	4.040
41	1	4749	1.000000e+00	2.79609e-02	3.133
42	1	4788	1.000000e+00	2.13079e-02	4.980
43	1	4803	1.000000e+00	2.02866e-02	2.864
44	1	4815	1.000000e+00	1.97980e-02	2.705
45	1	4829	1.000000e+00	1.95104e-02	1.940
46	1	4840	1.000000e+00	1.90520e-02	1.814
47	1	4849	1.000000e+00	1.85245e-02	1.908
48	1	4855	1.000000e+00	1.84591e-02	1.903
49	1	4863	1.000000e+00	1.83469e-02	2.574
50	1	4871	1.000000e+00	1.82177e-02	1.641
51	1	4880	1.000000e+00	1.78580e-02	1.605
52	1	4889	1.000000e+00	1.76906e-02	1.569
53	1	4898	1.000000e+00	1.74077e-02	1.607
54	1	4907	1.000000e+00	1.72673e-02	1.561
55	1	4916	1.000000e+00	1.71410e-02	1.570
56	1	4925	1.000000e+00	1.70219e-02	1.544
57	1	4934	1.000000e+00	1.69025e-02	1.543
58	1	4943	1.000000e+00	1.67544e-02	1.538
59	1	4949	1.000000e+00	1.66833e-02	1.940
60	1	4955	1.000000e+00	1.66286e-02	1.641
61	1	4961	1.000000e+00	1.65740e-02	1.928
62	1	4967	1.000000e+00	1.65197e-02	1.626

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63	1	4973	1.000000e+00	1.64655e-02	1.914
64	1	4979	1.000000e+00	1.64117e-02	1.611
65	1	4985	1.000000e+00	1.63579e-02	1.901
66	1	4991	1.000000e+00	1.63046e-02	1.597
67	1	4997	1.000000e+00	1.62512e-02	1.888
68	1	5003	1.000000e+00	1.61982e-02	1.582
69	1	5009	1.000000e+00	1.61452e-02	1.877
70	1	5015	1.000000e+00	1.60926e-02	1.567
71	1	5021	1.000000e+00	1.60398e-02	1.866
72	1	5027	1.000000e+00	1.59876e-02	1.552
73	1	5033	1.000000e+00	1.59351e-02	1.857
74	1	5039	1.000000e+00	1.58832e-02	1.536
75	1	5045	1.000000e+00	1.58309e-02	1.848
76	1	5051	1.000000e+00	1.57792e-02	1.521
77	1	5057	1.000000e+00	1.57271e-02	1.841
78	1	5063	1.000000e+00	1.56756e-02	1.505
79	1	5069	1.000000e+00	1.56236e-02	1.835
80	1	5075	1.000000e+00	1.55723e-02	1.489
81	1	5081	1.000000e+00	1.55203e-02	1.830
82	1	5087	1.000000e+00	1.54691e-02	1.472
83	1	5093	1.000000e+00	1.54171e-02	1.827
84	1	5099	1.000000e+00	1.53658e-02	1.455
85	1	5105	1.000000e+00	1.53137e-02	1.825
86	1	5111	1.000000e+00	1.52624e-02	1.438
87	1	5117	1.000000e+00	1.52100e-02	1.825
88	1	5123	1.000000e+00	1.51586e-02	1.420
89	1	5129	1.000000e+00	1.51058e-02	1.828
90	1	5135	1.000000e+00	1.50541e-02	1.402
91	1	5141	1.000000e+00	1.50008e-02	1.833
92	1	5147	1.000000e+00	1.49486e-02	1.383
93	1	5153	1.000000e+00	1.48945e-02	1.842
94	1	5159	1.000000e+00	1.48417e-02	1.363
95	1	5165	1.000000e+00	1.47867e-02	1.854
96	1	5171	1.000000e+00	1.47330e-02	1.343
97	1	5177	1.000000e+00	1.46765e-02	1.872
98	1	5183	1.000000e+00	1.46216e-02	1.321
99	1	5189	1.000000e+00	1.45633e-02	1.896
100	1	5195	1.000000e+00	1.45067e-02	1.298
101	1	5201	1.000000e+00	1.44457e-02	1.929
102	1	5207	1.000000e+00	1.43868e-02	1.274
103	1	5213	1.000000e+00	1.43219e-02	1.977
104	1	5219	1.000000e+00	1.42596e-02	1.247
105	1	5225	1.000000e+00	1.41889e-02	2.046
106	1	5231	1.000000e+00	1.41214e-02	1.217
107	1	5240	1.000000e+00	1.39655e-02	1.205
108	1	5249	1.000000e+00	1.38131e-02	1.196
109	1	5255	1.000000e+00	1.37416e-02	2.070
110	1	5261	1.000000e+00	1.36710e-02	1.182
111	1	5267	1.000000e+00	1.36005e-02	2.051
112	1	5273	1.000000e+00	1.35305e-02	1.167
113	1	5279	1.000000e+00	1.34604e-02	2.033
114	1	5285	1.000000e+00	1.33908e-02	1.152
115	1	5291	1.000000e+00	1.33209e-02	2.018
116	1	5297	1.000000e+00	1.32516e-02	1.137

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117	1	5303	1.000000e+00	1.31817e-02	2.005
118	1	5309	1.000000e+00	1.31125e-02	1.122
119	1	5315	1.000000e+00	1.30424e-02	1.996
120	1	5321	1.000000e+00	1.29730e-02	1.106
121	1	5327	1.000000e+00	1.29023e-02	1.990
122	1	5333	1.000000e+00	1.28325e-02	1.090
123	1	5339	1.000000e+00	1.27608e-02	1.990
124	1	5345	1.000000e+00	1.26901e-02	1.073
125	1	5351	1.000000e+00	1.26169e-02	1.995
126	1	5357	1.000000e+00	1.25448e-02	1.055
127	1	5363	1.000000e+00	1.24693e-02	2.008
128	1	5369	1.000000e+00	1.23952e-02	1.037
129	1	5375	1.000000e+00	1.23162e-02	2.033
130	1	5381	1.000000e+00	1.22388e-02	1.017
131	1	5390	1.000000e+00	1.20726e-02	1.000
132	1	5396	1.000000e+00	1.19938e-02	2.003
133	1	5402	1.000000e+00	1.19147e-02	9.792
134	1	5411	1.000000e+00	1.17429e-02	9.598
135	1	5417	1.000000e+00	1.16601e-02	1.960
136	1	5423	1.000000e+00	1.15767e-02	9.357
137	1	5432	1.000000e+00	1.13825e-02	9.141
138	1	5441	1.000000e+00	1.11935e-02	9.201
139	1	5447	1.000000e+00	1.11205e-02	1.851
140	1	5453	1.000000e+00	1.10492e-02	9.072
141	1	5459	1.000000e+00	1.09779e-02	1.830
142	1	5465	1.000000e+00	1.09072e-02	8.936
143	1	5471	1.000000e+00	1.08364e-02	1.811
144	1	5477	1.000000e+00	1.07663e-02	8.800
145	1	5483	1.000000e+00	1.06958e-02	1.794
146	1	5489	1.000000e+00	1.06259e-02	8.663
147	1	5495	1.000000e+00	1.05554e-02	1.780
148	1	5501	1.000000e+00	1.04857e-02	8.524
149	1	5507	1.000000e+00	1.04149e-02	1.770
150	1	5513	1.000000e+00	1.03449e-02	8.381
151	1	5519	1.000000e+00	1.02732e-02	1.765
152	1	5525	1.000000e+00	1.02024e-02	8.234
153	1	5531	1.000000e+00	1.01292e-02	1.766
154	1	5537	1.000000e+00	1.00571e-02	8.081
155	1	5543	1.000000e+00	9.98150e-03	1.777
156	1	5549	1.000000e+00	9.90716e-03	7.918
157	1	5555	1.000000e+00	9.82760e-03	1.800
158	1	5561	1.000000e+00	9.74964e-03	7.743
159	1	5567	1.000000e+00	9.66367e-03	1.844
160	1	5573	1.000000e+00	9.57978e-03	7.550
161	1	5582	1.000000e+00	9.38828e-03	7.408
162	1	5588	1.000000e+00	9.29897e-03	1.862
163	1	5594	1.000000e+00	9.20877e-03	7.211
164	1	5603	1.000000e+00	9.00939e-03	7.054
165	1	5612	1.000000e+00	8.82482e-03	6.955
166	1	5618	1.000000e+00	8.76107e-03	1.502
167	1	5624	1.000000e+00	8.69785e-03	6.842
168	1	5630	1.000000e+00	8.63488e-03	1.481
169	1	5636	1.000000e+00	8.57248e-03	6.730
170	1	5642	1.000000e+00	8.51016e-03	1.462

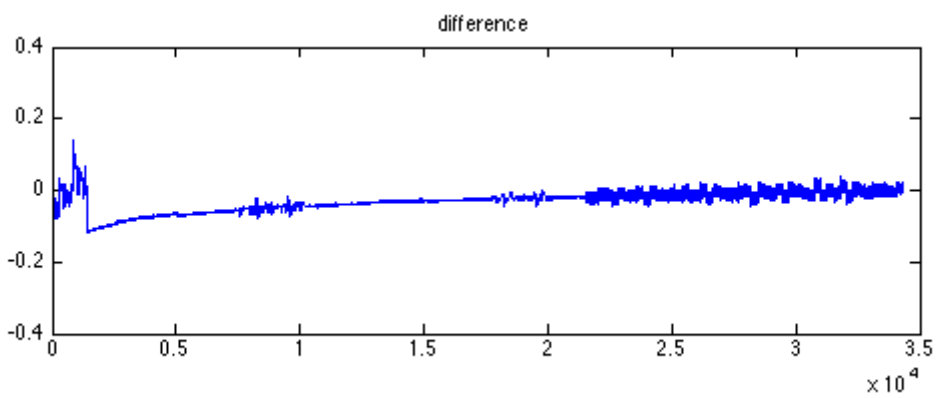
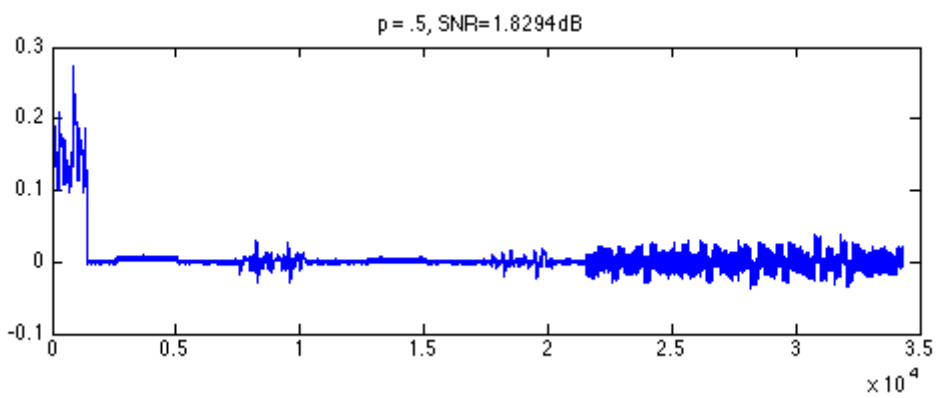
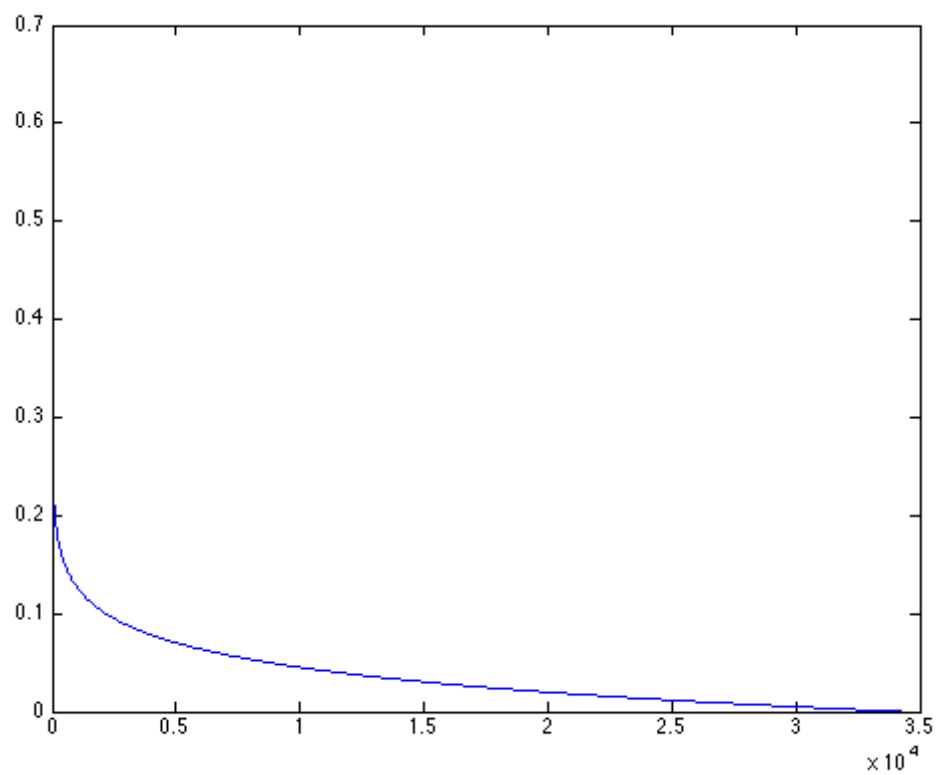
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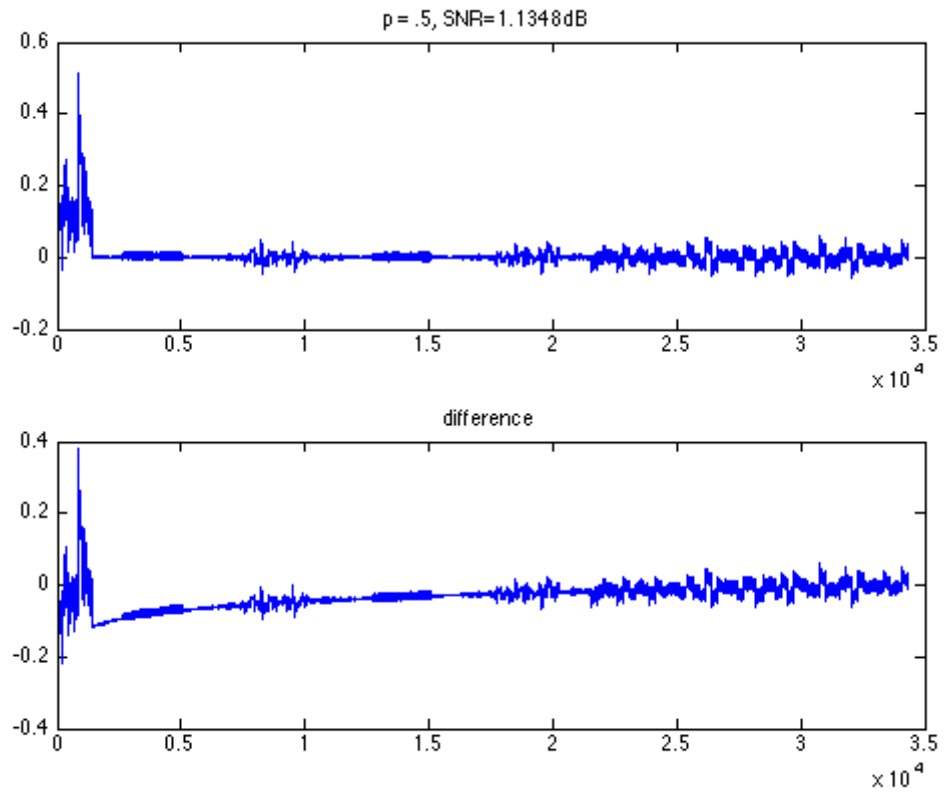
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171	1	5648	1.00000e+00	8.44842e-03	6.618	
172	1	5654	1.00000e+00	8.38655e-03	1.445	
173	1	5660	1.00000e+00	8.32529e-03	6.506	
174	1	5666	1.00000e+00	8.26358e-03	1.431	
175	1	5672	1.00000e+00	8.20254e-03	6.394	
176	1	5678	1.00000e+00	8.14066e-03	1.420	
177	1	5684	1.00000e+00	8.07951e-03	6.279	
178	1	5690	1.00000e+00	8.01701e-03	1.413	
179	1	5696	1.00000e+00	7.95532e-03	6.162	
180	1	5702	1.00000e+00	7.89159e-03	1.412	
181	1	5708	1.00000e+00	7.82878e-03	6.040	
182	1	5714	1.00000e+00	7.76296e-03	1.418	
183	1	5720	1.00000e+00	7.69822e-03	5.912	
184	1	5726	1.00000e+00	7.62898e-03	1.435	
185	1	5732	1.00000e+00	7.56106e-03	5.775	
186	1	5738	1.00000e+00	7.48612e-03	1.469	
187	1	5744	1.00000e+00	7.41292e-03	5.624	
188	1	5753	1.00000e+00	7.24515e-03	5.482	
189	1	5762	1.00000e+00	7.08697e-03	5.435	
190	1	5768	1.00000e+00	7.02578e-03	1.331	
191	1	5774	1.00000e+00	6.96450e-03	5.328	
192	1	5780	1.00000e+00	6.90362e-03	1.308	
193	1	5786	1.00000e+00	6.84337e-03	5.225	
194	1	5792	1.00000e+00	6.78327e-03	1.287	
195	1	5798	1.00000e+00	6.72383e-03	5.123	
196	1	5804	1.00000e+00	6.66421e-03	1.269	
197	1	5810	1.00000e+00	6.60528e-03	5.021	
198	1	5816	1.00000e+00	6.54572e-03	1.256	
199	1	5822	1.00000e+00	6.48690e-03	4.917	
200	1	5828	1.00000e+00	6.42685e-03	1.247	
200	6.4268465e-03	1.9000947e+00	1.49e-03	0.0	25657	0

EXIT -- Optimal solution found

Products with A	:	207	Total time (secs)	:	1280.6
Products with A'	:	207	Project time (secs)	:	139.9
Newton iterations	:	0	Mat-vec time (secs)	:	95.2





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