

hw4

homework #4  
ce597 adj. geospatial obs.

make LS estimation of parameters and residuals for the 7-parameter model

$$\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \lambda * M * \begin{bmatrix} X \\ Y \\ Z \end{bmatrix} + \begin{bmatrix} Tx \\ Ty \\ Tz \end{bmatrix}$$

coordinates are observed in both systems, x,y,z and X,Y,Z  
sigma x,y,z = 0.02  
sigma X,Y,Z = 0.05

point #	x	y	z	X	Y	Z
1.000	12.443	-2.681	7.103	3.474	2.633	4.175
2.000	10.225	-4.430	6.415	3.236	1.558	3.323
3.000	9.735	-5.590	7.530	3.491	0.801	3.479
4.000	8.704	-1.880	8.705	1.754	1.542	4.365
5.000	13.141	-4.276	4.991	4.467	2.687	3.169
6.000	7.474	3.777	1.663	0.164	4.850	1.595
7.000	6.503	-6.529	3.003	2.941	0.533	0.807
8.000	7.508	3.416	0.655	0.251	4.993	0.989
9.000	14.882	-1.141	2.135	4.443	4.835	2.661
10.000	10.856	-2.148	9.319	2.596	2.027	5.013
11.000	9.256	0.592	1.922	1.793	4.023	1.687
12.000	11.156	-1.301	2.022	3.041	3.901	1.815
13.000	10.428	-5.512	0.886	4.260	2.361	0.713
14.000	9.095	-4.444	3.500	3.174	1.872	1.790
15.000	10.663	2.954	4.574	1.300	4.769	3.354