

hw7_test_verify_data

hw7 data to test & verify 6-par transformation code

x	y	z	X	Y	Z
1988.94	642.69	-484.66	590.35	2051.36	115.22
1962.76	685.27	-498.61	539.31	2057.83	107.38
1958.82	657.34	-467.61	562.40	2029.93	128.69
2004.87	688.28	-470.85	563.79	2083.72	143.18
1988.82	645.43	-484.24	588.05	2052.66	116.16
1921.47	669.68	-478.40	529.92	2010.48	113.78
1962.66	651.11	-461.19	570.22	2027.81	134.11
1950.96	616.31	-475.21	590.32	2004.66	109.57
1990.23	647.71	-471.71	588.14	2050.91	129.05
1962.57	687.73	-461.33	540.57	2047.24	143.13
1992.63	699.08	-504.15	545.24	2090.45	111.73
1985.68	716.76	-504.49	526.71	2094.35	114.49
1961.68	713.68	-493.42	516.29	2070.34	119.14
2014.59	661.92	-493.12	588.92	2084.63	117.48
1977.85	726.11	-503.12	514.85	2092.80	116.44
2024.32	660.53	-463.44	598.47	2081.94	147.01
1961.53	727.27	-515.40	503.24	2084.52	101.90
1993.24	694.68	-474.51	551.54	2079.15	138.84
1921.88	682.56	-476.26	520.11	2017.10	119.23
1974.64	637.37	-458.07	588.60	2029.00	135.84

initial approximations:

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=====
omega=18 deg
phi = 6 deg
kappa=54 deg
tx = 9
ty = 3
tz= = 3

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first iteration B & f

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=====
B =
Columns 1 through 3
302.132244792038      -270.230559479207      -648.346687383569
476.184538649811      371.94045642599       1984.47699282605
1975.68162663112     -641.922821556861      0
309.55279277561     -278.893900987525     -690.805910603804
482.057897332444      383.864523048907      1958.23988908694
1979.39183220611     -592.150805763016      0
287.407126006499     -260.587978212938     -662.94509372724
463.390590361843      358.668581904423      1953.82323603456
1959.55179203939     -612.094636564638      0
286.287487750215     -262.16345203949     -694.287876627712
469.765404239163      360.837035595465      1999.81999625596
2014.88200402348     -613.774009858528      0
301.640179089352     -270.084107578824     -651.13632178311
476.024307483002      371.738882678084      1984.33749450374
1977.20011183599     -639.583964862962      0
295.436299539423     -267.35938257587     -674.806062724178
466.238797716345      367.988620445764      1916.64577809301
1936.5728737175     -580.646549580598      0
282.727838544131     -256.711282899112     -656.943898307647
459.946782849016      353.332768563299      1957.76140603702
1959.21229438236     -619.264503894122      0
297.640574066333     -264.937629781033     -622.004450725617
466.957042129854      364.655363683099      1946.55849751316
1929.77421217478     -640.94620634895      0
291.142371223632     -262.596201560274     -653.50933995406
468.696812872764      361.432664211965      1985.4796893848
1979.50628892186     -638.335518141037      0
279.338550774088     -257.028123723274     -693.517599518912
460.232026188929      353.768862545342      1957.47572502603
1980.36215643035     -589.5078389819      0
312.372131850495     -282.003654181616     -704.557395376301
488.288311028358      388.144731122382      1988.25751258501
2011.58220611444     -598.669537285206      0
310.943239161104     -282.312206321771     -722.267899737201
487.839590620644      388.569416709613      1981.02902913332
2016.11922227905     -580.092642308944      0
302.677627542994     -276.030043936847     -719.075699065565
479.06956696378      379.92276198154       1956.89899281642
1994.83850448954     -568.491907417397      0
306.723872878701     -275.071874799169     -667.81858416021
483.699022051429      378.603955303687      2010.30430558986

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                                hw7_test_verify_data
                                0
ft =                                0                                -1
Columns 1 through 3
4.53699282605317                8.65668738356908                27.916312275178
Columns 4 through 6
4.47988908694401                8.53591060380359                27.1273553610158
Columns 7 through 9
4.00323603455604                8.60509372724039                27.2712513726817
Columns 10 through 12
3.94999625596279                9.00787662771154                27.8308952044935
Columns 13 through 15
4.51749450373563                8.70632178310973                27.7454711300686
Columns 16 through 18
4.17577809301179                8.1260627241777                26.5410501826669
Columns 19 through 21
4.10140603701734                8.83389830764656                27.446679377562
Columns 22 through 24
4.59849751315687                8.69445072561712                27.4711821277811
Columns 25 through 27
4.24968938480129                8.79933995405963                27.9546577451553
Columns 28 through 30
3.90572502603322                8.78759951891232                27.0476375711777
Columns 31 through 33
4.62751258500521                8.47739537630048                27.3767272243577
Columns 34 through 36
4.34902913331825                8.50789973720146                27.1917869694751
Columns 37 through 39
4.21899281641754                8.39569906556551                26.8096399913433
Columns 40 through 42
4.71430558986003                8.89858416020957                28.1397746943511
Columns 43 through 45
4.39760910669202                8.3853285635123                26.9028325858051
Columns 46 through 48
4.1030574421759                8.91002728455942                28.2155715345718
Columns 49 through 51
4.61741470499828                8.34389325701306                26.7612926951906
Columns 52 through 54
3.98465143670614                8.8914112433813                27.5099190357346
Columns 55 through 57
4.29448579060977                8.09497857456336                26.4960035568994
Columns 58 through 60
4.13533119887825                8.87312419154603                27.5185112692504

```

LS estimate 6 parameters (om, ph, kp, tx, ty, tz)

```

=====
ans =
0.322785881261732                0.0882267130276138                0.948185116482911
ans =
8.10690394143255                3.31355497695226                2.70372079112862

angles degrees
ans =
18.4942686827082                5.05501829679415                54.3270053715911

```

residuals

=====

```

v =
-0.0155313018867923
-0.0419306702146303
0.044755011381779
-0.0324272135270432
0.128385097036534
0.046950653885076
-0.17580827486014
-0.0338208731938139
0.0280442891022137
-0.0737637915453249
0.0921848409719315
0.0823922400690223
-0.0124429575439435
0.00635709195928539
-0.10068530461012
-0.110081299374837
-0.176302795901165
0.0169083401577615
-0.00850489368588836
0.114463909202385
0.0870457262989491

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0.0273568554017764
0.166967273974635
0.0108243727433407
-0.0534219077298233
-0.0151202095369307
0.106957985477119
0.0285603112518245
0.0724848261088192
-0.00400342396004951
0.113500640073576
-0.0806410380142081
-0.0883806150704781
-0.0555250637927528
3.29220601157842e-05
-0.00612760656834132
-0.0255048429782301
-0.0456549279315575
-0.0149728363904924
0.149679178505037
0.100975822363118
0.00117918218440981
0.0731946694684217
-0.0818013408221519
-0.0892763632410817
0.0214864430167068
-0.196353659821513
-0.0913620476927157
0.0968972848386184
0.085149172066409
0.0485659253777725
-0.0617847363116132
0.0837986397113483
0.00717305309577444
0.128188092697542
-0.229120480888467
0.0691995280990658
-0.0140671920171144
0.0499464008698551
-0.155188110339006