Data Adj: 1 Homework 7 GPS Pseudorange Adj

assigned 28 Mar 2011, due Wed. 6 April.

Go to www.ngs.noaa.gov/CORS & find the observation file for station INWL (INDOT "INCORS" station in West Lafayette) for Tuesday, 1 Feb, 2011. (filename = inwl0320.11o). It will
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be compressed as .gz. Likewise go to NGS orbit page, www.ngs.noaa.gov/orbits and find the final orbit file for the same day (filename = ngs16212.sp3) It will be compressed
final GPS week Tuesday

as .Z. Satellite positions are in coordinate system IGS05 = ITRF2005.

(a) Make a LS adjustment of receiver position at epoch 0h 0m 0.00 s (midnight) using the pseudorange observable on L1, C/A code (obs. label = "C1")

(b) make a LS adjustment of receiver position using 5 epochs:

0h	0m	0.00 s
0	30	0.00
1	0	0.00
1	30	0.00
2	0	0.00

(c) in both cases assume $\sigma_{pseudorange} = 25\,m$. Make a global test @ $\alpha = 0.01$.

(d) <u>extra credit</u>: using the transformations described in a provided journal article, transform results of (a) & (b) into NAD83.

Remember: $PR_{corr} = PR_{raw} + c \cdot dt_s$

↑ use corrected, refined pseudorange in the condition equations

dt_s tabulated for each satellite.