Zero Baseline Testing: OMSRE

JPL
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Background

The difference of two single freq. range(code) measurements between receivers is:

$$\Delta R = (t_r^1 - t_t^1) - (t_r^2 - t_t^2)$$
$$\approx \dot{S} \times \delta t + \delta t + \Delta \tau \tag{1}$$

- δt is the difference in receiver sampling times
- $\dot{S}$ is the time derivative of the range signal
- $\approx \dot{S} \times \delta t$ is small with good initial synchronization ($10^3 m/s \times 10^{-6} s = 10^{-3} m$)
- $\Delta \tau$, difference in delay through the receiver, function of SVN and receiver

Processing

- Use PPP to verify receivers were closely synchronized, $\approx \dot{S} \times \delta t$ can be ignored for range
- Use a robust mean of the single-differences to remove δt, recorded and reported for ISC studies (C1Y-C1C)
  - Outliers in C1C, for the first day made no difference for C[12]Y
- Compute mean, standard deviation, for each day of the SVN dependent term, $\Delta \tau$, after a 3-sigma edit of the data
  - Editing made no real difference for the first day for C[12]Y