



Investigation of vertical displacements due to loading effects with the GINS CNES/GRGS

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Numbers of physical phenomena are sources of crustal deformation at various time frequencies. Their consideration and modelisation is currently discussed in the framework of the IERS conventions.

This paper focuses on oceanic, atmospheric and hydrologic loading effects which can generate centimetre vertical deformation at respectively sub-daily, weekly and seasonal time scales. Measurements are derived from GPS observations. CNES/GRGS has implemented the capability to process GPS data in the Precise Point Positioning (PPP) mode in its GINS software which was already capable to estimate classical network adjustment using Zero-Difference and Double-Difference observables. The PPP and "network" strategies are compared. PPP solutions are computed using cross-combinations of different GPS orbit and clock products as well as antenna phase centre corrections. The sources of discrepancies between the different time series of solutions are discussed.