# Comparison of GPS station position and loading displacement model time series. What can we learn?

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The International GNSS service (IGS) analysis centers have started to reanalyze GPS data to deliver to the scientific community fully self-consistent and improved products: station positions, satellites orbits, clocks and Earth Rotation parameters. After removing the linear trend mostly due to tectonic motion from the time series of GPS station positions, we suggest to compare the remaining non-linear part to a loading model, which includes the contribution of the atmosphere, non tidal ocean and hydrology.

To properly compare those two data sources, it is necessary to express the station positions into the same reference frame or, in other words, to remove global biases that affect all position time series. A well distributed core network of stations is introduced for that purpose. Results including translation and scale time series variations, network-averaged East, north and Up displacement time series will be discussed and compared to the loading model equivalent quantities. Loading corrections applied before the estimation of Helmert parameters to GPS coordinates will be used to quantify the degree of agreement between GPS stations and loading models at individual sites.