The antenna phase centre variations (PCV) of GNSS-satellites (GNSS: Global Navigation Satellite system) are traditionally estimated from the data of a terrestrial tracking network (e.g., from the International GNSS Service, IGS). These measurements are affected (among others) by tropospheric delay considered in the data processing procedure by models (e.g., GPT/GMF or ECMWF/VMF1).

In particular, systematic deficiencies of the mapping function could map into the PCV estimates. We will assess this phenomenon by comparing the resulting GNSS satellite antenna PCV corrections when using different troposphere models for processing the data from the ground network.

On the other hand, GPS-data collected by low Earth Orbiters (LEOs) are not affected by the troposphere. When using these measurements for computing GNSS satellite antenna PCV corrections other problems arise, e.g., the number of different antenna models is very limited, the data are affected by multipath from the LEO environment, and only GPS-satellites can be calibrated in this way so far. Nevertheless, the results from such an analysis seems also be useful to evaluate the impact of troposphere models on the GNSS satellite PCV corrections derived from a terrestrial network of tracking stations.