Quality and consistency of the IGS combined products

Gendt, Gerd¹; Kouba, Jan²

¹GFZ Potsdam, GERMANY; ²Natural Resources Canada, Ottawa, CANADA

The quality and consistency of the IGS Analysis Center's contribution to the IGS combined products have steadily improved over the last years. The agreement among the Final/Rapid orbits is now at the 2 to 3 cm level or below for most of the ACs. The weekly network solutions have a consistency (stddev) of 1 to 2 mm and 5 to 6 mm for horizontal and height components, respectively. With this high level of precision smaller unmodeled or not correctly modeled effects as well as AC model or technological inconsistencies start to get visible. All those inconsistencies will have a measurable effect on the combined products, and therefore it is most important to reach the highest level of consistency in the near future, without influencing the progress at the individual ACs.

In the paper the basic IGS Products will be investigated for existing inconsistencies, especially between the orbit and the SINEX products.

Station positions obtained by Precise Point Positioning (PPP), using IGS combined orbits and clocks as well as those from individual ACs, are inspected for biases to the ITRF in realizing the IGS reference frame. The new modern mapping functions, based on numerical weather models, are evaluated for their use in PPP (station repeatability, ZPD), which give also some measure for the network processing.

The effects from various used ocean tide loading models on daily mean stations positions and geocenter are computed and compared.