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SESSION   Session 2: Performance evaluation

TYPE   Presentation

TITLE   Simulation of Multi-Technique Terrestrial Reference Frames with Focus on Benefits from Enhanced SLR Networks

ABSTRACT

The requirements of the Global Geodetic Observing System (GGOS) on the quality of global Terrestrial Reference Frames (TRFs), i.e. 1 mm accuracy and 0.1mm/yr stability, have not been met by the available state-of-the-art TRFs. In order to adress this issue we simulate the observations of all four space geodetic techniques contributing to the TRF in the time span 2008-2014. The simulations are carried out as realistically as possible following the tracking record of the stations and the accuracies achieved in that time span. At the time being we have succeeded in combining the simulated GPS, SLR, and VLBI networks and assessing the requirements on local ties and the potential of the planned VLBI network enhancements to reach the GGOS goals.

Here we investigate the benefits of enhancing the SLR network by foreseeable upgrades and re-locations of current sites and by probable new sites. For the network enhancements we selected 14 sites, the simulations of their observations are based on a global cloud atlas that allows to better predict possible tracking records. We then assess the benefits of each new site with respect to the old situation in terms of improvement of mean coordinate and Earth orientation parameter precision.