Geophysical Research Abstracts
Vol. 18, EGU2016-15268, 2016
EGU General Assembly 2016


# Simulations parameter estimation in near real-time from a future VGOS network

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The new geodetic Very Long Baseline Interferometry (VLBI) system, the VLBI Global Observing System (VGOS), will present a number of opportunities and challenges for VLBI data analysis. For example, there will be an increase in the number of observations per day by a factor of 10-30 or more compared to today. Furthermore, another goal of VGOS is to reduce the latency between observation and availability of the results, like the Earth Orientation Parameters (EOP), to less than one day. Ideally, the results should be available in real-time. Thus, every part of the VLBI processing chain, e.g. observation, data transfer, correlation, and data analysis, needs to be able to operate autonomous in real-time.

To meet the challenges that VGOS will put on the VLBI data analysis, we have implemented a Kalman filter module in to our software, VieVS@GFZ, which is able to analyze VLBI data fully automated in near real-time. In this contribution, we present this module, in particular the setup for real-time analysis, and we test its performance through simulation of a real-time estimation scenario from a potential future 30 station VGOS network. We investigate what real-time precision can be obtained for the estimated parameters, like the EOP, station coordinates, and tropospheric delays. Furthermore, we study how well the Kalman filter is able to autonomously cope with potential problems in the VLBI data, such as clock breaks.