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The potential of VLBI satellite tracking for inter-technique ties

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Current realizations of the International Terrestrial Reference Frame (ITRF) follow the GGOS goal of integrating the various space geodetic techniques but face the problem of an imperfect inter-technique connection. One solution might be the use of space-ties by a satellite that can be utilized as observational target from different techniques.
In this presentation we propose VLBI satellite tracking to a satellite whose position is accurately given by alternative techniques, e.g. GNSS, SLR or DORIS, and focus on the precise coordinate determination of the observing sites. We simulate observations in VLBI mode, meaning that at least two stations observe the target at the same epoch, and account for turbulence in the troposphere, clock errors and a measurement noise. Considering possible heights of the observed satellite and the related restrictions on common visibility, regional as well as global station networks are investigated. Facing the troposphere as the main error source, the influence of the observation interval and the benefit of additional observations to quasars in order to increase the sky coverage for each station will also be treated.