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## **PPP Simulations for Troposphere Delay Modelling in VLBI**

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Within the IVS (International VLBI Service for Geodesy and Astrometry), investigations are carried out to significantly improve the existing technology and observing strategy of geodetic VLBI (Very Long Baseline Interferometry) ('VLBI2010'). Simulation studies are carried out to discuss and plan future observing strategies and station networks. For these simulations it is of prime importance that stochastic parameters like the tropospheric wet delay or the clock behaviour are realistically simulated and subsequently estimated as good as possible. With a Monte Carlo simulator, time series of cumulative delay observables – consisting of equivalent zenith wet delays (provided by a turbulence model), stochastic errors of station clocks, and thermal noise of the antennas – are generated. They form the input to a precise point positioning (PPP) analysis software. Comparisons with network solutions from a Monte Carlo simulator based on the VLBI analysis software package OCCAM agree fairly well. This makes the PPP simulator a powerful tool for investigating the impact of different analysis strategies on the repeatabilities of station positions. Different parameterizations of zenith wet delay, i.e. gradients and combinations of spherical harmonics, using different estimation intervals and constraints, are tested on their ability to model the stochastic fluctuations of tropospheric wet delay provided by the turbulence model.