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Status of SOLVK VLBI software

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The SOLVK software has been originally developed in the 80s to analyze Very Long Baseline Interferometry (VLBI) data. It aims to estimate astrometric and geodetic parameters related to VLBI observables as well as additional parameters that affect them. SOLVK relies on a Kalman filtering adjustment of these parameters mostly based on the partial derivatives computed by CALC software. This estimation approach is appropriate to deal with VLBI observables since some of the parameters, including clock and atmosphere, exhibit stochastic behaviors during a session of observation.

SOLVK is currently being updated in order to be compatible with the most updated standards of the International VLBI Service (IVS) and the International Earth Rotation and Reference Systems Service (IERS). This paper presents the changes that will be implemented which are related to the modeling of atmospheric delay, the deformation of the antennae, the displacements of the Earth crust due to loading effects and the Earth rotation.