Combination of long time series of tropospheric parameters observed by VLBI

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The Very Long Baseline Interferometry (VLBI) provides long and consistent time series of observations, which at some stations exceed two decades. Together with the meteorological surface data recorded at each VLBI site reliable time series of tropospheric parameters can be obtained, e.g. of wet zenith delays. On the poster the combination method of the tropospheric parameter time series submitted by various Analysis Centers (AC) of the International VLBI Service for Geodesy and Astrometry (IVS) will be demonstrated. To achieve a meaningful weighting strategy the characteristics of the time series are assessed by variance component estimation and Allan variance analysis. Outliers are detected and eliminated in advance, applying the robust BIBER (bounded influence by standardized residuals) estimator. The periodic effects inherent in the time series are determined with Fourier- and wavelet analysis, considering the unevenly sampled dataset. Prerequisites for the combination of tropospheric parameters at the normal equation level will be addressed.