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A report on JWG C.2: Quality control methods for climate applications of geodetic tropospheric parameters

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We have been analyzing the ZTD time series estimated from six REPRO3 IGS Analysis Centers (ACs), namely, COD, ESA, GFZ, GRG, JPL, TUG, to compare their long-term trends. Long-term here means 20 years or longer. About thirty stations have been selected globally for this purpose. The estimated ZTD time series have gone through a process of homogenization using ERA-5 derived ZTDs as reference. The homogenized data is then averaged to daily values to minimize potential influences coming from different estimation strategies used by individual ACs. As mentioned, our interest is with the long-term signal. Similar averaging is applied to the ERA-5 ZTDs. Two combinations, using weighted mean and (a robust) least median of squares, are being generated from the six homogenized ACs. The combinations serve as quality control to each ACs. Analysis of the trends generated from each one of the seven ZTD times series is performed looking at their similarities in both time and frequency domains. This is a work in progress and the presentation will focus on the process and early results.