

Total mapping functions from numerical weather models
(Poster)

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In the last years, numerical weather models have been investigated to be used for tropospheric mapping functions. These mapping functions (e.g., the Isobaric Mapping Functions IMF, or the Vienna Mapping Functions VMF) map down the tropospheric zenith delays onto the elevation of the observation. However, they are still based on a separation between the hydrostatic and the remaining wet part of the atmosphere, and by that they depend on the measured pressure values at the VLBI and GPS sites which are the input parameters for the determination of the hydrostatic zenith delays. Since many GPS stations do not dispose of pressure sensors, the analysis of regional and global GNSS networks is subject to errors from these deficiencies. The authors re-introduce the concept of the total mapping functions to GPS data analysis and validate it by applying it to VLBI analysis.