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Atmospheric water vapour from CONT-campaigns

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During the last ten years, four continuous observation campaigns were performed that involved a number of international geodetic stations with co-located equipment for several space geodetic techniques. These so-called CONT-campaigns concentrated primarily on Very Long Baseline Interferometry (VLBI) measurements and observations of Global Navigation Satellite System (GNSS) signals. The analysis of these data sets allows deriving information on the amount of atmospheric water vapour, usually parameterized as so-called zenith wet delay and horizontal delay gradients. Furthermore, did several of the participating stations additionally operate ground-based microwave radiometers during these CONT-campaigns, and for some of the stations also observations from relatively nearby radiosonde launch sites are available. Time series of atmospheric water vapour can be derived also from these two techniques, too. Additionally, atmospheric water vapour information is also available from Numerical Weather Models (NWP). The different techniques are based on different measurement principles and provide results with different temporal and spatial resolution. The individual data sets are used to perform inter-technique comparisons and to assess the agreement of the results derived from the various techniques. The data are also used to derive parameters of a model describing atmospheric turbulence and approaches to handle atmospheric corrections for the space geodetic techniques are tested.