



Estimating zenith tropospheric delays (ZTD) by data coming from ground

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It was widely demonstrated that the zenith tropospheric delays (ZTD) estimated by data coming from ground GPS networks can be helpful for meteorology and climate applications. Currently a dense network of GPS stations distributed all over the Europe, as well as in USA and in Japan, is running and providing data suitable for such applications. In these last years extensive activities of validation of the ZTD and comparisons with those achieved with other techniques have widely proved the reliability of such kind of observations with a bias less than 4-5 mm and an error of the order of few millimetres. Thus the reliability of ZTD estimated with GPS make worthwhile to investigate if the estimated ZTD could be helpful also to remove or, at least minimize, the atmospheric phase delays in the Interferometric Synthetic Aperture Radar observations which could be mistaken with non-linear ground deformations. Thus for this purpose we will estimate the atmosphere phase delays to compare against the GPS ZTD, by applying the SAR Permanent Scatterers approach on COSMO-SKY-MED (CSK) images. CSK is a constellation of orbiting satellites devoted to SAR remote sensing of Earth.