



Dense GNSS Networks to Access Fine Structures in the Troposphere

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Today, ground-based GNSS Zenith Tropospheric path Delays (ZTD) are used operationally in meteorological applications such as Numerical Weather Prediction (NWP) and nowcasting. In that frame, the geodetic community plays an important role by operating GNSS data analysis centres, which provides high quality Zenith Tropospheric path Delays to the meteorological community. In the regional networks processed by these analysis centres, inter-station distances are often largely above the 10 - 30 kilometres spatial resolution targeted for regional Numerical Weather Prediction (NWP) and nowcasting applications. Therefore, using GNSS observations from these regional networks allows to detect only large mesoscale patterns in the tropospheric refractivity field. In this poster, we address the potential benefits of using GNSS observations from dense national networks to access small-scale structures (such as meso-beta and meso-gamma scales) in the troposphere and we give an example of such an application for a multi-cell storm that occurred in Belgium on the 29th June 2005.