EMS Annual Meeting Abstracts
Vol. 12, EMS2015-323, 2015
15th EMS / 12th ECAM
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COST Action ES1206: GNSS for Severe Weather and Climate (GNSS4SWEC)

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Global Navigation Satellite Systems (GNSS) have revolutionised positioning, navigation, and timing, becoming a common part of our everyday life. Aside from these well-known civilian and commercial applications, GNSS is now an established atmospheric observing system which can accurately sense water vapour, the most abundant greenhouse gas, accounting for 60-70% of atmospheric warming. Severe weather forecasting is challenging, in part due to the high temporal and spatial variation of atmospheric water vapour.Water vapour is under-sampled in the current meteorological and climate observing systems,
obtaining and exploiting more high-quality humidity observations is essential to weather forecasting and climate monitoring.

The new COST Action, ES1206, will address new and improved capabilities from developments in both the GNSS and meteorological communities. For the first time, the synergy of the three GNSS systems (GPS, GLONASS and Galileo) will be used to develop new, advanced tropospheric products, exploiting the full potential of multi-GNSS water vapour estimates on a wide range of temporal and spatial scales, from real-time monitoring and forecasting of severe weather, to climate research. In addition the Action will promote the use of meteorological data in GNSS positioning, navigation, and timing services and stimulate knowledge transfer and data sharing throughout Europe.