

Validation of GPS data products for meteorological Services. User requirements and initial approach

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Radio occultation (RO) measurements based on receiving GPS signals by receivers onboard Low Earth Orbiting (LEO) satellites are now available for meteorological services and climatological studies. GPS RO observations hold information on atmospheric profiles of pressure, temperature and humidity. The GPS-based observations are expected to provide precise detection with nearly absolute long-term stability of these atmospheric parameters since they rely on frequency or phase measurements which are considered highly accurate and reproducible. However, space weather effects, which may depend on location at the Earth and on the conditions at the Sun and in the solar wind, may disturb the measurements and introduce biases as well as larger variances in the data. The presentation will outline the initial approach and discuss user requirements such as the generic requirements to GPS RO data for meteorological services and climatological investigations defined by WMO and WRCP as well as the specific requirements to remove regional or event based space weather effects from the data sets.