

Tropospheric GRAS Data and Retrieval

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The GRAS receiver on Metop-A and - after its launch currently scheduled for late May 2012 - Metop-B, is currently configured for take radio occultation measurements between -250 km and 85 km in Straight Line Tangent Altitude, allowing the observation of deep tropospheric occultations. We will review the measurement characteristics of GRAS data in the current configuration especially for tropospheric data and discuss the signal attenuation patterns observed for deep occultations. For example, apart from data gaps in both closed loop and raw sampling mode, deep occultation data from GRAS exhibits cross-PRN tracking events which can be stronger than the actual atmospheric signal.

A prototype system is running in parallel with the operational GRAS processing, aiming at retrieving bending angle profiles into the troposphere even for deep occultations. We discuss the retrieval and quality control algorithms implemented for GRAS retrievals, and compare the results with bending angle profiles from other data centres having processed GRAS data. The system described here is the basis for reprocessing the entire archive of GRAS data since late 2006, an activity planned for 2012. An operational implementation of the same algorithms is expected for late 2012.

We briefly discuss differences in processing setup EUMETSAT has implemented for other radio occultation missions, e.g. for ROSA and COSMIC data.