



## **Quality Aspects of the WEGC Multi-Satellite GPS Radio Occultation Record**

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GPS Radio Occultation (RO) is a limb sounding satellite technique providing thermodynamic atmospheric parameters since 2001. Its properties include high vertical resolution, global coverage, and high quality within the upper troposphere to the mid stratosphere. Data from different GPS RO missions can be combined to a single dataset, if processed in a consistent way. The Wegener Center provides such a multi-satellite dataset combining data from CHAMP, SAC-C, CNOFS, the COSMIC satellites, MetOp-A/B, and GRACE (WEGC OPSv5.6).

For climate applications, data consistency and quality are essential. Specifically for a combined multi-satellite record such as GPS RO, with several satellites providing data for the same time period, quality control and consistency checks need to be conducted. Information about distinct quality characteristics of the various satellite instruments is important for producing a homogeneous long-term multi-satellite data record.

A systematic analysis of the quality aspects has been performed on the recent WEGC RO processing version OPSv5.6. It comprises a review of the technical consistency of the input data as well as plausibility checks on the resulting thermodynamic atmospheric parameters. The applied quality control helps to identify atmospheric profiles with reduced data quality. Thereby, the adequacy of the datasets for climate applications can be assured and its maturity enhanced.