



Copernicus Sentinel-5 Precursor Data Product Release and Validation Results Overview

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Copernicus Sentinel-5 Precursor (S-5p) is the first of a series of atmospheric chemistry missions within the European Commission's Copernicus Programme, launched successfully in October 2017. Its Commissioning Phase was completed at the end of April 2018, after which the operational Phase E2 started. With a nominal lifetime of 7 years, S-5p will provide continuity in the availability of global atmospheric data products between its predecessor missions SCIAMACHY (Envisat) and OMI (AURA) and the future Sentinel-4 and -5 series. S-5p will deliver unique data regarding the sources and sinks of trace gases with a focus on the lower Troposphere including the planet boundary layer due to its enhanced spatial, temporal and spectral sampling capabilities as compared to its predecessors.

The S-5p satellite carries a single payload, namely TROPOMI (TROPOspheric Monitoring Instrument) that was jointly developed by The Netherlands and ESA. Covering spectral channels in the UV, visible, near- and short-wave infrared, it measures various key species including tropospheric/stratospheric ozone, NO₂, SO₂, CO, CH₄, CH₂O as well as cloud and aerosol parameters.

The initial period of Phase E2 of about eight months duration, is the so-called Ramp-Up Phase. During this time the Payload Data Ground Segment services are gradually improved and the TROPOMI Level 1 and level 2 data products are assessed with respect to their quality, undergoing detailed geophysical validation in order to verify that the Mission Product quality requirements are met, before they are released to the public. The validation task is an activity carried out by two main teams, the S5-p Mission Performance Center (<http://mpc-vdaf.tropomi.eu/>), who is responsible for the routine validation and the Sentinel 5 P Validation Team, S5PVT (<https://earth.esa.int/aos/S5PVT>) selected after an Announcement of Opportunity call, who perform independent and complementary validation to the S5p MPC.

In this paper the Validation results of the S5-p products that have been publicly released are presented.