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Sentinel 5 precursor and the TROPOMI shortwave infrared total column products: Prelaunch activities accomplished

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Summer 2017, the TROPOMI instrument will be launched as payload of the Sentinel-5 Precursor mission. The instrument comprises a shortwave-infrared spectrometer module observing Earthshine radiances around 2.3 μm. Based on these measurements, data exploitation will provide users with the global total column distribution of methane, carbon monoxide, water vapor and its isotope HDO. In this presentation, we will discuss the results of our ten years' mission preparation to infer these atmospheric abundances for operational and scientific purposes. The main challenge of the processor development is to ensure the required data quality without exceeding the computational constraints of the processing facility. We discuss the algorithm baseline and the processor performance for the SWIR trace gases including an estimate of the data quality based on simulated measurements. Moreover, to demonstrate the maturity and heritage of the algorithms, we show recent applications to GOSAT and SCIAMACHY measurements and the verification with on-ground validation measurements.