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The TROPOspheric Monitoring Instrument (TROPOMI)

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The Copernicus Sentinel 5 Precursor (S5P), scheduled for launch in 2016, is the first of the sentinels dedicated to monitoring of the atmospheric composition. The main application areas of the mission are air quality, climate and the ozone layer. The single payload of the S5P mission is TROPOspheric Monitoring Instrument (TROPOMI). TROPOMI is a nadir viewing shortwave spectrometer that will measure in the UV-visible wavelength range (270-500 nm), the near infrared (710-770 nm) and the shortwave infrared (2314-2382 nm). TROPOMI will have an unprecedented spatial resolution of about 7x7 km2 at nadir. The spatial resolution is combined with a wide swath to allow for daily global coverage. The high spatial resolution serves two goals: (1) emissions sources can be detected with more accuracy and (2) the number of cloud-free ground pixels will increase substantially.
The TROPOMI/S5P geophysical (Level 2) data products include nitrogen dioxide, carbon monoxide, ozone (total column, tropospheric column & profile), methane, sulphur dioxide, formaldehyde and aerosol and cloud parameters.
In this contribution we will present the TROPOMI instrument performance and the new science opportunities that it will enable.