

EARTH OBSERVATION SYMPOSIUM (B1)  
Earth Observation Sensors and Technology (3)

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COPERNICUS SENTINEL-5 FOR ATMOSPHERIC MONITORING: DESIGN, PERFORMANCE AND  
DEVELOPMENT**Abstract**

Sentinel-5 is an Earth Observation instrument to be flown on the MetOp Second Generation satellites with the primary goal of monitoring atmospheric composition from polar orbit for the coming decades. The instrument, due for launch in 2021, is currently under development by a consortium led by Airbus Defence and Space in the frame of the European Copernicus Program and under a European Space Agency contract.

From a sun-synchronous LEO orbit, the push-broom grating spectrometer will provide daily global measurements at an unprecedented spatial resolution of key atmospheric constituents such as: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, methane, formaldehyde and aerosol. The instrument features five dispersive spectrometers acquiring spectra of Earthshine radiance covering the UV (270-370nm), VIS (370-500 nm), NIR (685-775 nm) and SWIR (1590...1675 and 2305-2385 nm) spectral ranges with spectral resolutions below 1 nm. Spatially, the Sentinel-5 provides a 108 degree across track field of view with a resolution of 7x7 km at Nadir.

This paper will report on the instrument architecture and design, the predicted instrument performance, technological challenges and the general status of the program.