

## Abstract of Contribution 2490

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### **The AURORA H2020 project: Advanced Ultraviolet Radiation and Ozone Retrieval for Applications**

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A general overview is provided of the Horizon 2020 project AURORA (Advanced Ultraviolet Radiation and Ozone Retrieval for Applications) funded by the European Union in the frame of the Call *Space, EO-2-2015: Stimulating wider research use of Copernicus Sentinel Data*. The overarching objective of AURORA is to simulate the provision of synergistic data products for the vertical profile of atmospheric ozone and to assess their quality with respect to the one expected for the operational products of the geostationary (GEO) mission Sentinel -4 and of the Low Earth Orbit (LEO) mission as Sentinel-5p and Sentinel-5.

The project addresses key scientific issues relevant for synergistic exploitation of data acquired in different spectral ranges by different instruments on board the atmospheric Sentinels. A novel approach, based on the assimilation of GEO and LEO fused products by application of an innovative algorithm to S-4 and S-5 synthetic data, is adopted to assess quality of the unique ozone vertical profile obtained in a context simulating the operational environment. First priority is then attributed to the lower atmosphere with calculation of tropospheric columns and UV surface radiation from the resulting ozone vertical distribution.

In parallel, AURORA tackles the technological challenges of creating the infrastructure, exploiting virtual machines and cloud data sharing, to implement the data processing chain, including a geo-database and web-services for data access. The infrastructure represents a best practice that plays a key role in ensuring wider use of Copernicus Sentinel data for academia, public agencies and industry. It is the basis for a market analysis for pre-market applications and uptake in commercial communities. Strategic dissemination and exploitation is targeted to European level (academia, CAMS, GEOSS) and international level (potential synergies and data exchange will be investigated with TEMPO and GEMS, in USA and ASIA).

This presentation offers a first introduction to the three years project AURORA (February 1<sup>st</sup>, 2016 – January 31<sup>st</sup>, 2019) and describes the scientific, technological and application-oriented concepts acting as the pillars of the proposed research and development activities. The scope and objectives of the project, the work plan, the expected outcome, as well as the long-term perspectives, are illustrated in some details. In conclusion, the progress status, along with a summary of the results obtained in the preliminary and first phase of the program, is reported. Furthermore, it will be possible to follow the subsequent steps and the dissemination initiatives of AURORA by using the list of references and contact points indicated at the end of the overview.