

Preparation of a Science Plan for the Microwave Sounder onboard EPS-SG/MetOp-SG

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The Microwave Sounder (MWS) will be part of the core payload of the future MetOp-SG operational satellites to be flown as part of the EUMETSAT Polar System-Second Generation (EPS-SG) programme from 2021 onwards. In total there will be six MetOp-SG satellites, divided into A and B-series. MWS will be embarked on the A-series together with 3MI, MetImage, IASI-NG, RO and Sentinel-5. The development of MetOp-SG builds upon the experience of the very successful MetOp-A and –B satellites launched in 2006 and 2012, respectively.

MWS is a traditional cross-track scanning microwave radiometer, providing a total number of 24 channels from 23 GHz up to 230 GHz. MWS will sense atmospheric temperature and water vapour profiles and in addition will provide information on cloud liquid water, precipitation, and surface properties. The MWS will contribute to primary mission objectives of the EPS-SG programme in the areas of Numerical Weather Prediction and climate monitoring.

One of the main tasks in the development phase is the preparation of a science plan to detail the scientific work, which is needed to meet the MWS related mission objectives. This plan will be prepared by the MWS Science Advisory Group (SAG) and external experts supported by ESA and EUMETSAT.. The plan can be used as reference for scientific activities to be undertaken within and outside the MWS SAG in the coming years.

This presentation will start with a short summary of the MWS instrument and requirements and then focus on the science plan content and the schedule of the preparation of this plan. The presentation is intended, on the one hand, to inform the wider science community about potential future science activities and, on the other hand, to encourage the community to make recommendations on any issue needed to be tackled to reach the objectives of the EPS-SG microwave sounding mission.