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MOF: the Ground Support to Metis Data and Operations

METIS is the coronagraph of the scientific payload of Solar Orbiter, a joint ESA-NASA mission aiming at studying the Sun poles and the circumsolar region. METIS operations are handled via the Metis Operations Facility (MOF), which is built, run, and maintained by ALTEC in close collaboration with INAF. MOF empowers the scientific analysis and exploitation of data acquired by METIS in different ways:

• Data retrieval and processing: the METIS raw telemetry is fetched on a daily basis from Mission Operation Center (MOC) and transformed up to L2 data products;
• Data archival: METIS data products are indexed and preserved with the aim of enabling exploitations of METIS data in space weather and solar science applications;
• Data exploration: the scientific team has the capability to explore the MOF archive by searching for METIS data products exploiting a wide set of scientific keywords;
• Data analysis and validation: reports about METIS data products are generated in order to allow the scientific team to detect observed solar events of interest like Coronal Mass Ejections (CMEs) and flares. Validated data is eventually published to the ESA Solar Orbiter Archive (SOAR);
• TM/TC Monitoring: METIS telemetry stored in MOF can be exploited to perform further analysis about the instrument and spacecraft status.

In the talk, MOF capabilities and the current state and nominal functioning will be presented. Moreover, future plans and perspectives to further exploit METIS data in space weather and big data and AI related applications will be discussed.

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