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## Observations of galactic cosmic rays and solar energetic particles with Metis/Solar Orbiter

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The Solar Orbiter Metis coronagraph captures images of the solar corona in both visible (VL) and ultraviolet (UV) light. Tracks ascribable to the passage of galactic and solar particles appear in the Metis images. An algorithm implemented in the Metis processing electronics allows us to separate the pixels fired by VL photons from those crossed by high-energy particles. The Metis particle observations are used to test the VL instrument performance and to study the spacecraft inner charging from solar minimum towards the next solar maximum. We considered the VL instrument only, since the process of separating the particle tracks from pixels fired by photons in the UV images has been proved to be very difficult for a quantitative analysis.

The visual analysis of Metis cosmic-ray matrices gathered from May 2020 through February 2023 with galactic cosmic rays (GCRs) only and on February 25, 2023 with both GCRs and solar energetic particles is compared to Monte Carlo simulations of the VL instrument during the same period. We have estimated the solar modulation parameter associated with the GCR proton energy spectrum modulation and found that Metis plays the role of a monitor of galactic and solar protons.

**Primary author:** GRIMANI, Catia (University of Urbino Carlo Bo and INFN Florence)

**Presenter:** GRIMANI, Catia (University of Urbino Carlo Bo and INFN Florence)

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