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**High energy radiation profile of Jupiter as observed by the JunoASC**

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**Calibration**

The µASC response to the high energy irradiation is fully calibrated using 1-2 MeV electron and 30-200 MeV proton irradiation with varied incidence angle, fluence, dose rate, temperature, TID, and DDD doses.

**Image analysis. Deposited energy**

A track left by an energetic particle that hit the CCD is ~50 pixels long (~0.7 mm or 160 µm/cm²) and has 4 or 5 splits due to recoil nuclei produced by the incident particle in silicon. Estimation of the primary energy of a particle that could traverse at least 0.7 mm in Si behind the heavy shielding will involve the transport flux modelling for the µASC, the calibration curves of the CCD and infight image analysis.

**Observations**

The wiggle plot below shows Juno's position in magnetic coordinates (Rho, Z) in [R_J]. In the trace of the orbit, the flux measured by the µASC is displayed with a color scale. The major Jovian moons and radial distance have been also added in the plot in addition to the model of the magnetodisc.

Juno's crossing of the magnetic field lines which intersect the Jovian moon orbits is shown. These crossings are correlated with observations of the µASC particle counter.

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**Jovian magnetic field**

Jupiter's magnetic field model (JRM09) by Connerney (2018) describes the field with spherical harmonics up to degree 10. It is based on measurements performed near Jupiter by the Juno mission. The JRM09 model shows a more complex Jovian magnetic field in comparison to earlier models (eg. VIP4), and a clear asymmetry within the northern and southern hemispheres. For larger distances to the planet (>10R_J), the magnetic field can be represented well by a 10.5° tilted magnetic dipole and there is no apparent differences wrt VIP4 model.

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**Highlights**

- Model of the high energy electron radiation environment near the
- Better constrains on the Jupiter's current sheet
- Magnetic footprint of the Jupiter’s inner planet

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