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Solar energetic particle transport between Earth and Mars

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Observing and modelling solar energetic particles (SEPs) aids to establish an early warning system to prevent any hazardous impact on humans and technology in space. Using the electron intensity observations from the MAVEN and WIND spacecraft, one-dimensional SEP transport is simulated during MAVEN's voyage along the Parker-Hohmann orbit from Earth to Mars. The soft X-ray data from GOES was used to approximate the injections of the SEPs in the model. The data is then used to determine if the SEPs followed the same trajectory along the Parker-heliospheric magnetic field. The understanding of SEP behaviour along the Parker-Hohmann orbit will be necessary for future crewed missions to Mars.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

Hons

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