

The HelMod model as a tool for the space radiation environment assessment

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The appropriate knowledge and forecasting of cosmic ion radiation experienced by spacecrafts at Earth location and by interplanetary probes during their transfer orbit is a piece of relevant information, especially for what concerns the estimation of the radiation hazard in electronic devices. The HelMod Model evaluates the solar modulation effect on local interstellar spectra of galactic cosmic rays (GCRs) by using a Monte Carlo approach to solve the Parker transport equation. The model was validated by means of comparison with experimental GCR spectra observed during high and low solar activity periods, in the inner and outer heliosphere, at the Earth's location, and outside the ecliptic plane. In this work, we present how the model can be used to assess the GCR contribution to the space radiation environment.

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