

# Stochastic Fluctuations of Low-Energy Cosmic Rays

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- Since the propagation distances of MeV cosmic rays are limited due to ionisation loss, the **discrete nature of sources** is important in predicting the cosmic-ray spectra.
- **We model the intensity distribution** expected from a statistical model of discrete sources and show that its expectation value is not representative.
- The Voyager proton and electron data are, however, compatible with the median of the intensity distribution **without requiring ad hoc breaks** in the source spectra or the diffusion coefficient.
- The stochastic fluctuations might help to resolve other anomalies, e.g. the discrepancy between predicted and observed **ionisation rate in molecular clouds**.

