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30 min. invited talk

Galactic cosmic ray transport modelling with Picard

Kissmann, Ralf[1]
[1]University Innsbruck

we will present our Galactic cosmic ray transport models computed with Picard, our newly developed code for the numerical solution of the cosmic ray transport equation. This code allows for the computation of cosmic ray spectra and the resulting Galactic gamma-ray emission. Shortcomings present in other propagation codes were overcome by the development of Picard: we introduced contemporary numerical solvers that allow efficient computation of very resolution models. As emphasized in recent studies, we also allow for locally anisotropic spatial diffusion using a full diffusion tensor. Picard was used to investigate the transition from axisymmetric cosmic ray source distributions to spiral arm cosmic ray source distributions, including consequences for the various observables related to cosmic rays. These observables include, e.g., the anisotropy in the cosmic ray flux observed at Earth.