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Galactic cosmic ray sources: a multimessenger view

Monday 7 August 2017 09:40 (30 minutes)

In this talk, the current state-of-the-art on our knowledge and ignorance of galactic cosmic ray sources will be presented. In particular, cosmic ray observables from MeV to (super-)PeV will be presented. This concerns a (potentially) direct view on the sources via ionization signatures, neutrinos and gamma-rays as well as those pieces of information provided by cosmic rays themselves, i.e. spectrum, composition and anisotropy. The latter heavily relies on the transport properties through the magnetized plasma of the interstellar medium, which will be a special focus of the talk. The different methods for Galactic propagation will be reviewed in the context of the interpretation of the data, discussion in particular the role of the diffusion tensor and advection and their contributions to a possible Galactic wind.

Author: TJUS, Julia **Presenter:** TJUS, Julia

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