

# Constraining cosmic ray propagation through gamma-rays

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New instruments in gamma-ray astronomy like Fermi and the next generation IACTs have boosted our understanding of the high-energy Universe and its non-thermal processes. In fact, with the improved spatial and temporal resolutions together with real-time multimessenger astronomy, the instruments now provide us with information that cannot be modeled with the simplifying 1D approaches of leptohadronic modeling that have worked decently before. Instead, the role of 3D cosmic-ray transport has been shown to become more and more important. This talk will provide a short review of how cosmic-ray propagation in different astrophysical environments like the Milky Way can be constrained with the help of state-of-the-art measurements of gamma rays.

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