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The Transition between Galactic and Extragalactic Cosmic Rays

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The energy around which the transition from Galactic to extragalactic cosmic rays (CR) occurs is still unknown. Solving this major question would bring valuable clues about the nature and characteristics of Galactic and extragalactic CR sources, such as the maximum energy reachable by Galactic accelerators. The transition must lie between the knee (energy $E \sim 4$ PeV) and the ankle ($E \sim 3$ EeV). I will argue that important progress has been made thanks to recent observational data on the CR composition and anisotropy from the knee to the highest energies. I will show how one can constrain the energy of the transition with the existing data and the current knowledge of the Galactic magnetic field. Implications for sources will also be addressed. Finally, I will discuss which measurements would be needed in the future in order to solve this question.

Primary author: GIACINTI, Gwenael (University of Oxford, Clarendon Laboratory)

Presenter: GIACINTI, Gwenael (University of Oxford, Clarendon Laboratory)

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