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Particles and radiation from supernova remnants

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Unveiling the origin of the cosmic-ray (CR) flux observed at Earth remains among the main challenges in the field of astroparcle physics. The Galactic CR component is believed to be produced bysupernova remnants (SNRs) as a result of diffusive shock acceleration, though the acvity of this class of sources in the knee region is yet to be proven. In this context, the process through which accelerated particles escape from their sources affects both the spectral and morphological radiave signatures from these sources as well as the formation of the CR spectrum. As a result, the gammaray emission strongly depends on the level of diffusion experienced by the parcles at the accelerator, that can hence be constrained observationally together with the maximum energy of particles achieved, as I will discuss in this contribution.

Summary

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