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Escape model: CR composition and diffuse gamma-ray and neutrino backgrounds

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I review the escape model for Galactic cosmic rays (CRs) that reproduce over a wide range of energies all available experimental data for individual groups of CR nuclei.

Then I discuss how the extragalactic proton component derived within this model can be explained by astrophysical sources, especially blazars. The diffuse neutrino and γ -ray fluxes produced by these CR protons interacting with gas inside their sources contribute the dominant fraction of both the isotropic γ -ray background and of the extragalactic part of the astrophysical neutrino signal observed by IceCube.

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