Contribution ID: **298** Type: **Talk**

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

Thursday 17 December 2015 17:15 (20 minutes)

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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Session Classification: 19 - VHE & CR