



Contribution ID: 709

Type: **Poster contribution**

Diffuse CR, neutrino and gamma-ray fluxes from starburst and star-forming galaxies within the 'escape model'

Saturday 1 August 2015 15:30 (1 hour)

We have shown that the cosmic ray (CR) knee can be entirely explained by energy-dependent CR leakage from the Milky Way, with an excellent fit to all existing data ("escape model"), see Contribution 122, CR-TH, from D. SEMIKOZ.

In the present work, we have applied our escape model to other normal galaxies. We have also calculated the CR flux expected to leak from starburst galaxies. From this, we have inferred the diffuse CR intensity from normal and starburst galaxies, and compared the resulting nuclear composition at Earth with observational constraints.

We have then computed the diffuse neutrino and gamma-ray fluxes (produced by CR interactions with gas in their host galaxies), and compared our results to the recent IceCube observations of high-energy neutrinos and to the Fermi-LAT determination of the diffuse extragalactic gamma-ray background.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

623

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

Co-authors: SEMIKOZ, Dmitri (APC - Paris Diderot); Prof. KACHELRIESS, Michael (NTNU Norway); KALASHEV, Oleg (Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia)

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

Session Classification: Poster 2 DM and NU

Track Classification: NU-TH