ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **345** Type: **Oral contribution**

# Diffuse gamma-ray and neutrino emissions of the Galaxy with spatial dependent cosmic-ray transport

*Tuesday, 4 August 2015 11:45 (15 minutes)*

As recently shown, Fermi-LAT measurements of the diffuse gamma-ray emission of the Galaxy favor the presence of a smooth softening of the primary cosmic-ray spectrum with the Galactocentric distance. This result can be interpreted in terms of a spatial dependent rigidity scaling of the diffusion coefficient. The DRAGON code has been used to build a model which implements such feature reproducing latest Fermi-LAT results as well as local cosmic-ray measurements including PAMELA, AMS-02 and CREAM ones.
Here we show that if extrapolated at larger energies the model grasps the gamma-ray flux measured by MILAGRO at 15 TeV from the inner Galactic plane region as well as that measured by H.E.S.S. from the Galactic ridge. Furthermore, considering the presence of a large reservoir of gas in a very extended halo around the Galaxy, recently inferred from X–ray observations, we show as our model also predicts a neutrino emission which may account for a significant fraction, as well as for the spectral shape, of the astrophysical flux measured by IceCube above 25 TeV.

## Collaboration

– not specified –

## Registration number following ”ICRC2015-I/”

343

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**Session Classification:** Parallel CR16 TH prop

**Track Classification:** CR-TH