

# Signatures of Cosmic-Rays Transports on Gamma-Ray Starburst Galaxies Observations

*Thursday, 6 October 2022 12:10 (20 minutes)*

Experimental observations have demonstrated a strong correlation between star-forming processes and gamma-ray luminosities, giving strong hints about the nature of the Cosmic-Rays (CRs) transport mechanisms inside Starburst Nuclei (SBNs). In this talk, I will discuss the imprints on nearby Starburst galaxies (SBGs) gamma-ray spectra left by different CR transport models, quantifying the potentiality of future measurements from CTA and SWGO telescopes to distinguish between them. I will also investigate the possibility of constraining the properties of light Dark Matter (DM) particles exploiting the peculiar nature of CR transport inside SBNs. I will show that the property of elastic scattering between high-energy CRs and DM particles leads to observable features, thereby posing stringent constraints on the DM parameter space.

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