



Contribution ID: 116

Type: Plenary/Parallel talk

The search of dark satellites with gamma rays

Monday 22 August 2022 17:10 (20 minutes)

A prediction of the standard Λ CDM cosmological model is that dark matter (DM) halos are teeming with numerous self-bound substructure, or subhalos. The most massive ones host the observed dwarf satellite galaxies, while smaller subhalos may host no stars/gas at all and thus may have no visible astrophysical counterparts and would remain completely dark. Yet, some of these 'dark satellites' are expected to be excellent targets for gamma-ray DM searches given their typical distances and structural properties. In this talk, I will discuss the importance that DM subhalos may have for DM searches with present or future gamma-ray observatories, such as the NASA Fermi satellite and the future Cherenkov Telescope Array (CTA). I will also describe the recent efforts we have made to search for dark satellites in Fermi-LAT data and to set constraints (predictions, for CTA) on the nature of the DM particle using these elusive targets. [This talk will be based on results from 1906.11896, 1910.14429, 2101.10003 and 2204.00267.]

Author: Dr SÁNCHEZ-CONDE, Miguel A. (IFT UAM/CSIC)

Presenter: Dr SÁNCHEZ-CONDE, Miguel A. (IFT UAM/CSIC)

Session Classification: Parallel Session Main Cupula: DM

Track Classification: Dark matter, neutrinos & astroparticle physics