Contribution ID: **7** Type: **not specified**

Distinguising dark matter from millisecond pulsars with the Cherenkov Telescope Array

Tuesday 8 June 2021 09:15 (25 minutes)

The leading explanation of the Fermi Galactic center gamma-ray excess is the extended emission from an unresolved population of millisecond pulsars (MSPs) in the Galactic bulge. Such a population would, along with the prompt gamma rays, also inject large quantities of electrons/positrons (e-e+) into the interstellar medium. These e-e+ could potentially inverse-Compton (IC) scatter ambient photons into gamma rays that fall within the sensitivity range of the upcoming Cherenkov Telescope Array (CTA). In this talk, I will highlight the unique capabilities of the Cherenkov Telescope Array to detect the expected IC signal from a putative population of 10 to 50 thousand MSPs in the center of our Galaxy. I will further show that, if an IC signal were detected, then CTA can successfully discriminate between a MSPs and a dark matter origin for the radiating e-e+.

Authors: MACIAS-RAMIREZ, Oscar; MACIAS, Oscar (University of Amsterdam)

Presenters: MACIAS-RAMIREZ, Oscar; MACIAS, Oscar (University of Amsterdam)

Session Classification: MOCa