Contribution ID: **326** Type: **not specified**

BSM Searches with Wide-field of View TeV Observatories

Monday, September 11, 2023 3:00 PM (15 minutes)

Observations of very high-energy (>1 TeV) cosmic gamma rays are a powerful, unique tool to explore new physics beyond the Standard Model. The Southern Wide-field Gamma-Ray Observatory (SWGO), a next-generation experiment looking for cosmic gamma rays, will be situated in the Southern hemisphere with gamma-ray sensitivity up to the PeV range. This observatory will have an order of magnitude better sensitivity than the current-generation High Altitude Water Cherenkov (HAWC) observatory. Because of its increased sensitivity and location in the Southern hemisphere, SWGO will be ideally situated to look for dark matter signals from the Milky Way. Specifically, SWGO will be able to search for dark matter with annihilation cross-sections a thousand times smaller than those observable with HAWC. SWGO will also be well-situated to search for other phenomena Beyond-the-Standard-Model, including Primordial Black Holes, Axion-like Particles, and Violations of Lorentz Invariance and to complement other next-generation observatories in these searches. In this presentation, I will discuss the prospects for SWGO as a leading observatory in next-generation searches for physics beyond the Standard Model.

Primary author: ALBERT, Andrea (Los Alamos National Laboratory)

Presenter: ALBERT, Andrea (Los Alamos National Laboratory)

Session Classification: IDM: Indirect DM searches

Track Classification: Indirect DM searches