



Contribution ID: 46

Type: **not specified**

The Cherenkov Telescope Array (CTA): Prospects for Fundamental Physics and Cosmology with Very-High-Energy Gamma Rays

Monday, 18 July 2022 20:40 (20 minutes)

The Cherenkov Telescope Array is designed to improve the sensitivity to 20 GeV – 300 TeV gamma rays by a factor of 5 – 20 compared to current instruments. It will provide the unprecedented capability to probe extreme astrophysical environments, explore fundamental physics, and search for dark matter (DM) signatures. In particular, the CTA DM sensitivity will reach the thermal relic cross-section for DM masses above ~200 GeV, and extend to DM masses above ~1 TeV, which are inaccessible to other existing or upcoming experiments. Observations of extragalactic gamma rays enable tests of Lorentz invariance and measurements of the extragalactic background light, cosmological parameters, intergalactic magnetic fields, axion-like particles, and primordial black holes. CTA is an international project that has profited from strong U.S. participation in technology development in the form of a novel dual-mirror Schwarzschild-Couder Telescope and in science planning. The U.S. support for CTA construction, if provided, will enhance the science reach of the observatory and ensure U.S. access to this transformational facility and the discoveries it will enable.

In-person or Virtual?

In-person

Primary authors: FENG, Qi (SAO); FOR THE CTA SCT PROJECT

Presenter: FENG, Qi (SAO)

Session Classification: Poster Session