Contribution ID : **240** Type : **Oral talk**

Recent results on ultra-high-energy cosmic rays from the Telescope Array experiment

Friday, 30 October 2026 17:00 (15)

The Telescope Array (TA) is the largest cosmic-ray observatory in the Northern Hemisphere and it is dedicated to studying the origin and properties of cosmic rays over a wide energy range. The experiment consists of two types of detectors: a surface array of scintillation detectors and telescopes designed to detect fluorescence and Cherenkov light. Together with its low-energy extension, TALE, the Telescope Array covers the energy range from 2×10^{15} to 2×10^{20} eV. The ongoing TAx4 expansion will further extend the capabilities of the experiment by increasing its effective area by a factor of four, thereby improving the statistics of the highest-energy cosmic-ray events. This talk will review the current status of the TA, TALE, and TAx4 projects and summarize recent results from the Telescope Array Collaboration. Particular attention will be given to measurements of the cosmic-ray mass composition in hybrid mode in the $10^{16.5}$–$10^{18.5}$ eV range, as well as ultra-high-energy photon flux limits obtained with the use of novel machine-learning approaches. Recent studies of correlations between ultra-high-energy cosmic rays and BL Lacertae-type objects will also be discussed. Finally, interdisciplinary results on Terrestrial Gamma-Ray Flashes detected by the TA surface detector will be presented.

Primary author(s) : KUDENKO, Maria (Lomonosov Moscow State University, The Institute for Nuclear Research of the Russian Academy of Sciences); TELESCOPE ARRAY COLLABORATION

Presenter(s) : KUDENKO, Maria (Lomonosov Moscow State University, The Institute for Nuclear Research of the Russian Academy of Sciences)

Session Classification : Astroparticle physics

Track Classification : Astroparticle physics