Contribution ID: **42** Type: **not specified**

Very-High-Energy Astronomy with VERITAS

Monday, 10 January 2022 17:00 (30 minutes)

The Very Energetic Radiation Imaging Telescope Array System (VERITAS) consists of four atmospheric Cherenkov telescopes fully operating in the northern hemisphere since 2007. It is located at Fred Lawrence Whipple Observatory in southern Arizona, USA and is sensitive to gamma rays from 85 GeV to 30 TeV energy range. One of the major focuses of the broad science topics of the multinational VERITAS collaboration is indirect measurements of cosmic rays and their spectra via study of very-high-energy gamma-ray emission. So far, the gamma-ray observation has resulted in detection of 23 galactic and 41 extragalactic sources which include supernovae remnants, pulsar wind nebulae, gamma-ray binaries, active galactic nuclei, gamma-ray bursts, and starburst galaxies etc. VERITAS participates in multi-wavelength studies with several observatories and maintains an active multi-wavelength campaign with HAWC and LHAASO. Additionally, there is also a multi-messenger program with multiple collaborations to follow up on gravitational waves and high energy neutrino signals originating from the very energetic regions of the Universe. In this presentation, we summarize the recent results from VERITAS in gamma-ray physics along with the multi-wavelength and the multi-messenger efforts.

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Session Classification: Gamma ray astronomy I