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RESCEU コロキウム

東京大学大学院理学系研究科　附属ビッグバン宇宙国際研究センター

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場　所：オンライン (Zoom)

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CTA Small-Sized Telescopes for PeVatron Search

Abstract

The origin of galactic cosmic rays with energies up to about 3 PeV has been one of mysteries in high-energy astrophysics. Cosmic-ray detectors clearly shows a spectrum cutoff at this energy, but they cannot locate the accelerators, so-called PeVatrons, because of the interstellar magnetic field and bent cosmic-ray trajectories. Instead of direct cosmic-ray observations, observing gamma rays produced by hadronic interaction between cosmic-ray protons and interstellar medium makes it possible to locate PeVatrons. Ground-based gamma-ray telescopes (Cherenkov telescopes) and array-type detectors have recently detected sub-PeV gamma rays and found possible PeVatron candidates with a limited angular resolution and photon statistics. The Cherenkov Telescope Array (CTA), the next-generation ground-based gamma-ray telescope, is expected to join this PeVatron search race in 2020s with its wide energy coverage from 20 GeV to 300 TeV, and its large effective area of a few km^2. I will talk about the current development status of CTA and future prospects of our PeVatron search.

興味をお持ちの方の聴講を歓迎致します。