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TeV gamma-ray astronomy – a new window on the high-energy Universe

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11号館 221号室



Gamma rays are absorbed by the Earth's atmosphere, requiring detectors for gamma-ray astronomy to be flown on board satellites. However, at high-enough energies (\sim a TeV, 10^{12} electron volts) gamma rays may be detected indirectly via the showers of thousands of particles they create in the atmosphere: these particles emit Cherenkov radiation that can be detected with optical instrumentation. There are currently three state-of-the-art observatories in operation (VERITAS in Arizona, MAGIC in La Palma, and HESS in Namibia) that utilize this technique and, to date, more than 130 astronomical sources have been detected. The source catalogue includes supernova remnants, pulsars, binary systems starburst galaxies, and jets powered by supermassive black holes at the centers of active galaxies. In this talk I will describe the instrumentation and techniques used for TeV gamma-ray astronomy, with emphasis on the VERITAS array, which is the main instrument used by my research group, and provide an overview of the scientific highlights to date.

学外の方の聴講歓迎・申込不要・参加無料

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