

Observation of Gamma-ray Emission Above 10 TeV from the Super Nova Remnant G106.3+2.7 with the Tibet Air Shower Array and the Muon Detector Array

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The Tibet air-shower (AS) array has been in operation since 1990 at the altitude of 4,300 m in Tibet, China, to observe cosmic rays and gamma rays above TeV energies. The muon detector (MD) array has been in operation successfully since 2014 to improve the sensitivity of the Tibet AS array toward gamma rays above 10 TeV. The MD array records the charge and timing information of the water cells in synchronization with event trigger signals from the AS array. We can discriminate gamma rays from cosmic-ray nuclei based on the number of muons in air showers measured by the MD array, and thus suppress over 99.9% of background cosmic-ray events above 100 TeV. G106.3+2.7 is a supernova remnant, with the so-called “Boomerang” pulsar wind nebula located at its northeast edge. Above TeV energies G106.3+2.7 has been detected by Milagro and VERITAS. In this presentation we report on the observation of gamma-ray emission above 10 TeV from G106.3+2.7, using the data taken by the Tibet AS array and the MD array.

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