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Long-term monitoring of the radio-galaxy M87 in gamma-rays: joint analysis of MAGIC, VERITAS and Fermi-LAT data

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M87 was discovered as a very-high-energy gamma-ray emitter (VHE, $E > 100$ GeV) with HEGRA in 2003, even before its high-energy gamma-ray emission (HE, $E > 100$ MeV) was detected. These observations established M87 as the first extragalactic source with a tilted jet detected up to the TeV energies. After the major VHE flares in 2005, 2008, and 2010, M87 has been mainly observed in a quiescent low flux state with the exception of smaller-scale flares. MAGIC and VERITAS, two stereoscopic Cherenkov telescope arrays located at Roque de los Muchachos Observatory (Canary Islands, Spain) and the Fred Lawrence Whipple Observatory (Arizona, US), have been continuously monitoring M87 for more than 10 years since the last major flare in 2010. In this work, we present the first joint analysis with combined data from the two arrays and Fermi-LAT, studying the long-term evolution of the source flux and its broadband gamma-ray spectral energy distribution.

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