

Radio Imaging of the Very-High-Energy γ -Ray Emission Region in the Central Engine of a Radio G

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Full Text

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The accretion of matter onto a massive black hole is believed to feed the relativistic plasma jets found in many active galactic nuclei (AGN). Although some AGN accelerate particles to energies exceeding 10^{12} electron volts and are bright sources of very-high-energy (VHE) γ -ray emission, it is not yet known where the VHE emission originates. Here we report on radio and VHE observations of the radio galaxy Messier 87, revealing a period of extremely strong VHE γ -ray flares accompanied by a strong increase of the radio flux from its nucleus. These results imply that charged particles are accelerated to very high energies in the immediate vicinity of the black hole.