

Multi-messenger astronomy with Centaurus A

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We calculate for the nearest active galactic nucleus (AGN), Centaurus A, the differential flux of high energy cosmic rays and of accompanying secondary photons and neutrinos expected from hadronic interactions in the source. We use as two basic models for the acceleration of cosmic rays shock acceleration in the radio jet and acceleration in the regular electromagnetic fields close to the core of the AGN. Normalizing the ultrahigh energy cosmic ray flux from Centaurus A to the observations of the Auger experiment, we discuss the prospects for a future neutrino and gamma-ray detection.