A model for the electromagnetic spectrum of the inner jets of Centaurus A

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Centaurus A, the closest active galaxy, have been detected from radio to high-energy gamma-rays. The synchrotron radiation by extremely high energy protons may be a suitable mechanism to explain the MeV to GeV emission detected by the instruments of the Compton Gamma-Ray Observatory, as coming from the inner jets of Cen A. This scenario requires a relatively large magnetic field of about 10^4 G that could be present only close to the base of the jets. We investigate the spectral energy distribution (SED) resulting in a *one-zone* compact acceleration region, where both leptonic and hadronic relativistic populations arise.

We present here preliminary results of such a model, where we have also considered possible contributions from secondary electrons, and gamma-ray emission originated by the inelastic hadronic interactions between relativistic protons and cold nuclei within the jets themselves. The internal absorption of gamma-rays results of great relevance to shape the observable SED, which was also recently constrained by the results of HESS.