

Michael Zacharias, Anita Reimer, Andreas Zech

The imprint of protons on the emission of extended blazar jets

- Many blazars cannot be modeled with the one-zone model even in quiescent states, requiring the development of extended jet models
- Association of neutrinos with blazars demand a relativistic, hadronic component in the jet
- ExHaLe-jet is the first attempt for a kinetic, hadro-leptonic, extended jet model
- First results indicate a dominance of leptonic processes in the jet (inverse-Compton emission scattering BLR and torus photons for the gamma-ray component)
- Protons provide highly relativistic secondary electron/positron pairs, changing the ratio of proton number to electron number along the jet flow
- The secondary pairs are also a significant source of synchrotron radiation at gamma-ray energies