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## **A first synoptic blazar study comprising eleven blazars visible in $E > 100$ GeV gamma rays**

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### **Abstract content**

Since 2002, the number of detected blazars at gamma-ray energies of 100 GeV and above has more than doubled. A synoptic study of these objects therefore might reveal important collective characteristics. I present a study of all currently known high-frequency peaked BL Lac-type objects for which photon energy spectra at  $E > 100$  GeV have been inferred. The intrinsic energy spectra of the sources are reconstructed using a contemporary model for the extragalactic background light. Then, the properties of the observed emission are compared and correlated among each other, with X-ray data, and with the individual estimated black hole masses. In addition, I consider temporal properties of the found VHE gamma-ray flux. Key findings concern the flux-black hole mass and variability scale-black hole mass connections and the correlation of the spectral slope and the luminosity. The latter is also studied for sources for which individual distinct flux states have been observed. As a specific application, the synoptic study allows to constrain the redshift of PG 1553+113, a TeV blazars whose distance is unknown to date.

**If this papers is presented for a collaboration, please specify the collaboration**

### **Summary**

### **Reference**

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 881-884

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