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AP Librae: The extended jet as the source of VHE emission?

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The LBL AP Librae is a fascinating blazar, since its spectrum contains a few peculiarities, which are not easy to explain. First, the H.E.S.S. collaboration has announced the detection of VHE γ -ray emission from AP Librae. This results in an unusually broad inverse Compton component, since the X-rays are also inverse Compton dominated. Coupled with the narrow synchrotron component, the standard one-zone model fails to reproduce the spectrum.

Secondly, Chandra has detected X-ray emission from the extended jet, which closely follows the radio morphology. Due to the slope of the X-ray spectrum, one can conclude that the X-ray jet is of inverse Compton origin. Interestingly, an extrapolation of the Chandra jet spectrum to γ -ray energies intersects the Fermi-LAT spectrum exactly at the point of a strong break in the Fermi spectrum. This implies that the VHE spectrum measured by H.E.S.S. could be due to inverse Compton emission of the jet instead of the core, which would be an incredible result.

Collaboration

– not specified –

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Primary author: ZACHARIAS, Michael

Co-author: Prof. WAGNER, Stefan J. (LSW Heidelberg)

Presenter: ZACHARIAS, Michael

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