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Deciphering Blazar Emission Zones through Polarisation and Spectral Energy Distribution Studies

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Blazars produce highly polarised nonthermal synchrotron emission, detectable from radio to optical-UV/X-ray wavelengths. In contrast, the dusty torus, broad line region, accretion disk, and host galaxy emit unpolarised thermal radiation, which reduces the observed synchrotron polarisation. This effect is often visible as a decline towards shorter wavelengths in the total optical-UV polarisation degree. However, some observations show a decline in the polarisation degree at longer wavelengths, which can be attributed to partially ordered magnetic fields downstream of a shock in the jet. We present co-ordinated observations for 4C +01.02, PKS 0637 - 75, PKS 1510 - 089 and 3C 279 from the SALT, H.E.S.S., *Fermi*-LAT, *Swift*, ATOM/ASAS-SN and LCO observatories. From this, we discuss distinct emission zones - single, dual, or multiple regions - to model both the polarisation degree and the multi-wavelength spectral energy distributions simultaneously.

Author: SCHUTTE, Hester

Co-authors: VAN SOELEN, Brian; COOPER, Justin; BOETTCHER, Markus

Presenter: SCHUTTE, Hester

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