

Monte-Carlo Simulations of Compton Polarization for Blazars

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The spectral energy distributions (SEDs) of some blazars exhibit an ultraviolet (UV) and/or soft X-ray excess, which can be modelled with different radiation mechanisms. Polarization measurements of the UV/X-ray emission from blazars may provide new and unique information about the astrophysical environment of blazar jets and could thus help to distinguish between different emission scenarios. I will present a new Monte-Carlo code –MAPPIES (Monte-Carlo Applications for Partially Polarized Inverse External-Compton Scattering) –for polarization-dependent Compton scattering. I will present the code by showing results of the polarization signatures in a model where the UV/soft X-ray excess arises from the bulk Compton process. Predictions of the expected polarization signatures of Compton emission from the soft X-ray excess in the SED of AO 0235+164, and the UV excess in the SED of 3C 279 are made for upcoming and proposed polarimetry missions.

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