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Polarization maps from synchrotron sources associated with magnetohydrodynamic blazar jets

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Very long baseline interferometry offers high resolution images of parsec scale structures of AGN jets. These maps along with systematic observations and polarization measurements, when associated with synchrotron radiation from highly energetic electrons, provide significant information on spatial and dynamical evolution of the emitting regions. By modeling the physical conditions in blazar jets it is possible to reproduce some of the polarization characteristics observed, attributed to opacity effects and field topology, and thus to make assumptions for significant physical parameters such as particle distribution and magnetic field structure. Using a light tracing code and taking into account absorption and propagation effects, we produce resolved maps from semi-analytical and simulated magnetohydrodynamic jets, considering linear and circular polarization.

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