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The RoboPol Optical Polarization Monitoring Program

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Optical Synchrotron emission from blazars is significantly polarized and the polarization probes the magnetic field structure in the jet. Rotations of the polarization angle in blazars reveal important information about the evolution of disturbances responsible for blazar flares. The RoboPol program for the polarimetric monitoring of statistically complete samples of blazars was developed in 2013 to systematically study this class of events. RoboPol is a collaboration between the University of Crete, Caltech, the Max-Planck Institute for Radio Astronomy, the Inter-University Centre for Astronomy and Astrophysics in India, and the Nicolaus Copernicus University in Poland. Using a novel polarimeter operating at the 1.3m telescope of the Skinakas Observatory in Crete, it has succeeded in its 4 years of operation in taking optopolarimetric rotations of blazars from novelty status to a well-studied phenomenon that can be used to answer long-standing questions in our theoretical understanding of jets. I will review the RoboPol program and its most important results in the classification of the optopolarimetric properties of blazars, the statistical properties of polarization rotations, and their relation to gamma-ray activity in blazar jets.

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