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IXPE results for the extragalactic sky

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X-ray polarization is a crucial probe of the magnetic field structure and emission processes in astrophysical systems. This is particularly true for active galactic nuclei (AGN). In radio-loud AGN, X-ray polarimetry allows us to investigate particle acceleration and composition in jets, while in radio-quiet AGN it allows us to look at matter under extreme conditions at the heart of the supermassive black hole. Until now, polarization observations have been limited to the radio-to-optical range, thereby leaving a gap in our knowledge of the processes and physical conditions in the most energetic objects. The recently launched Imaging X-ray Polarimetry Explorer – IXPE, the first X-ray polarization mission to target AGN, thus offers a radically new way of studying high-energy processes. I will discuss results from the first year of IXPE observations of the extragalactic sky that clearly demonstrate the importance of X-ray polarization in our understanding of the Universe.

Summary

Primary author: LIODAKIS, Ioannis (KIPAC, Stanford University)

Presenter: LIODAKIS, Ioannis (KIPAC, Stanford University)

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