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IXPE re-shapes astrophysics through the lens of X-ray polarimetry

Thursday, 11 July 2024 10:00 (30 minutes)

In the early 1960s, as X-ray Astronomy was beginning to take shape, the critical role of X-ray polarimetry became apparent. By 2001, significant progress had been made, demonstrating the effective use of the photoelectric effect in gas as a breakthrough technique in Astrophysics. It wasn't until 2021 that an observatory with the required sensitivity utilizing the photoelectric effect could be launched. The Imaging X-ray Polarimetry Explorer (IXPE), a NASA-ASI SMEX mission, became the first Small Explorer mission equipped with three telescopes. Here, I will explore the earliest efforts in this field, the enabling technologies the IXPE mission's objectives and significant findings in its first two and half years. Highlights include Supernova Remnants, insights into acceleration processes, understanding the inner structures of compact objects like Black Holes and Neutron Stars, and Active Galactic Nuclei. I will look to future opportunities from IXPE's results.

Presenter: SOFFITTA, Paolo (INAF-IAPS)

Session Classification: Thursday plenary session