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XIPE the X-ray Imaging Polarimetry Explorer

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XIPE, the X-ray Imaging Polarimetry Explorer, is one of the three missions selected by ESA for study phase for down-selection of the fourth medium size mission. XIPE will measure the polarization in hundreds of celestial sources of different classes. It will allow for answering, in a novel way, to questions related to the acceleration phenomena in PWNe, Supernovae and blazars, to the transport of radiation in plasma embedded in a strong magnetic field like in pulsating X-ray binaries, to the scattering in a-spherical geometries, like in AGNs and in the molecular clouds located in the galactic centre region and, finally, to fundamental physics. It will be operated as a conventional X-ray observatory but providing polarimetry simultaneously to the usual imaging, temporal and spectral information. This is made possible by its unique payload configuration consisting of three Gas Pixel Detector at the focus of three large, albeit low-weight, X-ray telescopes and fitting in the Vega launcher. In this talk I am reviewing the scientific capability of XIPE, the characteristics of the payload and the mission profile.

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