X-RAY ASTRONOMY 2019
Current Challenges and New Frontiers in the Next Decade

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Data Mining and High Performance Computing in High-energy Astrophysics: the case of the Extragalactic X-ray pulsars.

Friday, 13 September 2019 15:56 (2 minutes)

The use of Big Data techniques and High Performance Computing (HPC) allows us to explore High-energy data archives in new ways, exploring and extracting new information buried in the fast growing volume of astrophysical data. I will talk about our mixed Data Mining and HPC approach and how it has allowed us to uncover a new population of Extragalactic Neutron Stars (NS), most of them - Ultra Luminous X-Ray sources (ULXs), a class believed to host intermediate-mass black holes. The discovery of these pulsating ULXs (PULXs), NS at strongly Super-Eddington luminosities, has change radically our views in the ULX population in general. I will describe these discoveries and their main implications and the future direction of our work in this field.

Topic

Compact and diffuse sources in galaxies and in the Galactic Center

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