

PHAROS Conference 2020: The multi-messenger physics and astrophysics of neutron stars



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General-relativistic corrections to pulsar radio and high-energy emission

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Due to the high compactness of neutron stars, signatures of relativistic effects are expected in their vicinity, effects that will affect, among other things, the trajectory of photons produced inside their magnetosphere. We have plotted light curves and sky maps for radio and high energy photons, taken into account light bending and Shapiro delay within the Schwarzschild metric, and compared it to flat space-time. Simulations of the emission maps from curvature radiation in the magnetosphere of a pulsar are realized following the polar cap and slot gap models. The objective of these researches is to determine a marker of general-relativistic effects in pulsars light curves, quantifying the significance of photon trajectory bending and Shapiro time-delay.

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