What could polarimetry tell us about neutron stars

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Abstract

Measuring the polarization of the radiation from AXPs in the optical or X-ray would not only verify the strength of their magnetic fields but also could provide an estimate of their radius and distance. Due to QED the extent of the polarization of radiation from the surface of a neutron star may be up to an order of magnitude larger than if one neglects QED in the calculation. The extent of polarization increases with the strength of the magnetic field and decreases as the radius increases, contrary to earlier results.

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