

STARS2015 - 3rd Caribbean Symposium on Cosmology, Gravitation, Nuclear
and Astroparticle Physics / SMFNS2015 - 4th International Symposium on
Strong Electromagnetic Fields and Neutron Stars

Contribution ID: 80

Type: **Talk**

Propagation of photon in a diluted medium moving parallel to the magnetic field: Faraday rotation angle

Thursday 14 May 2015 11:45 (15 minutes)

The dispersion equations for photons moving parallel to a constant magnetic field are solved for diluted magnetized gas. The quantum Faraday angle is obtained for a quantum relativistic diluted gas in the strong field limit as well as in the weak field approximation. Applications to the photon propagation in the magnetosphere of neutron stars are discussed.

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Track Classification: STARS2015