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

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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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