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Vacuum birefringence and dichroism in strong magnetic fields

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I discuss effects of strong magnetic fields on the photon propagation in vacuum. I elaborate on the mechanism that leads to the vacuum birefringence and the vacuum dichroism, putting an emphasis on the fermion spectrum in magnetic fields and showing explicit diagrammatic computation. I also mention potential experimental feasibility with the strong magnetic field induced by the ultraperipheral heavy-ion collisions.

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