

## Sagnac effect in solids

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The observation of the Sagnac effect for massive material particles offers a significant enhancement in sensitivity when compared to optical interferometers with equal area and angular rotation velocity. For this reason, there have been suggestions to employ solid-state interferometers that rely on semiconductors and graphene. We investigate the Sagnac effect in Dirac materials governed by the relativistic-like quasiparticle dispersion law and show that the fringe shift is still determined by the mass of a free electron. This confirms that graphene is indeed a promising material for creating solid-state Sagnac interferometers. Considering monolayer graphene with its linear dispersion law and comparing it with light provides a deeper understanding of the Sagnac effect.

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