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## Geometry-Dependent Faraday Rotation in Strained Graphene

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We investigate coherent single photon in the infrared regime traveling in the positive  $z$  direction passing through a single layer of strained graphene. The angle of rotation relates to space deformation by the terms of directional dependent fermi velocity. Analytical expressions of full quantum mechanics, by second-quantization approach, are obtained for components of the magneto-optical tensor.

The transmission, reflection and faraday angle can be calculated.

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