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Photon Polarization Operator in External Electromagnetic Field with Account of Virtual-Fermion AMM

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Non-diagonal two-point vector-tensor and tensor-tensor correlator of fermionic currents are calculated in a constant homogeneous magnetic field background. The crossed-field limit of these correlators is presented. The tensor current is a fermionic part of the Pauli Lagrangian density describing the electromagnetic interaction of fermions through their anomalous magnetic moment (AMM). Under assumption that this interaction enters the effective QED Lagrangian, the contribution induced by AMM to the photon polarization operator is calculated and discussed.

Primary author(s) : DOBRYNINA, Alexandra

Co-author(s) : KARABANOV, Ilya (P.G. Demidov Yaroslavl State University); PARKHOMENKO, Alexander (P.G. Demidov Yaroslavl State University); Prof. VASSILEVSKAYA, Lubov

Presenter(s) : DOBRYNINA, Alexandra

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