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Quantum interference noise near the Dirac point in graphene¹ NINA MARKOVIC, ATIKUR RAHMAN, JANICE WYNN GUIKEMA, Johns Hopkins University — We have studied low-frequency noise characteristics in single layer graphene, focusing specifically on the low-carrier density regime. We show that the 1/f noise at low temperatures is dominated by the time-dependent conductance fluctuations which occur due to quantum interference effects. Close to the Dirac point, the noise is reduced in magnetic field, but the relative noise reduction is larger than what might be expected based on the current theoretical understanding of quantum transport in graphene. The results reflect the inherent symmetry of the system and suggest the importance of additional degrees of freedom.

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