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Electrical noise in graphene FETs NAN SUN, KRISTOF TAHY, GERALD ARNOLD, DEBDEEP JENA, HUILI XING, STEVEN RUGGIERO, University of Notre Dame, DEPARTMENT OF PHYSICS TEAM, DEPARTMENT OF ELECTRICAL ENGINEERING COLLABORATION — We report on the lowfrequency electrical noise measured in graphene FETs. Samples were created by e-beam lithography using both exfoliated graphene and epitaxial graphene films on SiC. The observed 1/f noise varies as a function of gate bias, where the noise amplitude follows Hooge's empirical relation ( $S_V \sim 1/N$ ), and the noise spectrum deviates from 1/f behavior at low carrier densities. We discuss this behavior in the context of a model including random telegraph noise generated by slow traps.

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