

Abstract Submitted
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Low-frequency noise in graphene FETs NAN SUN, GERALD ARNOLD, KRISTOF TAHY, JIANCHUN ZENG, DEBDEEP JENA, HUILI XING, STEVEN RUGGIERO, University of Notre Dame, UNIVERSITY OF NOTRE DAME TEAM — We report on the low-frequency electronic noise in graphene-based FET structures. Samples were created using standard e-beam lithography and exfoliated, epitaxially-grown, and CVD-grown single-layer graphene films. The lowest overall noise was observed in epitaxially-grown films on SiC. We also investigated the gate dependence of the noise amplitude. Previous studies have suggested that the noise dependence should be either Λ -shaped in keeping with the Hooge model, or M-shaped as described by the charge-noise model. We here propose a new noise model based upon resonant scattering theory, which not only explains both types of gate dependence on noise, but also models the general noise behavior in graphene.

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