

Abstract Submitted
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Current-induced forces in graphene-based nanoelectromechanical systems SILVIA VIOLA KUSMINSKIY, Dahlem Center for Complex Quantum Systems - Freie Universität Berlin — Transport currents have distinct effects on the vibrational dynamics of nanoelectromechanical systems. Recently, we have developed a comprehensive scattering-matrix approach to treat out-of-equilibrium current-induced forces [c.f. Phys. Rev. Lett. 107, 036804 (2011)]. We apply our method to the vibrational dynamics of a suspended graphene membrane, paying special attention to the different coupling mechanisms between Dirac fermions and flexural modes in graphene.

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