

Abstract Submitted
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Thermoelectric effects in ballistic graphene ribbons.¹ EDUARD BOGACHEK, IGOR ROMANOVSKY, UZI LANDMAN, School of Physics, Georgia Inst. of Technology — A theoretical analysis of electrical and thermal transport in ballistic graphene strips and carbon bilayers, connected to electrodes, is presented. Gate voltage and temperature dependences of thermoelectric coefficients and thermoconductance for different ratios of strip lengths and widths are studied both in the linear and nonlinear regime (finite applied voltage and temperature differences). Violation of the Onsager relation between the Peltier and thermopower coefficients in the nonlinear regime is considered. Results obtained for carbon bilayers are compared with those in single layers. The effect of transverse voltage applied between layers on the thermoelectric transport in carbon bilayers is investigated.

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