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Van der Waals/Casimir interactions in graphene nanoribbons
DAVID DROSDOFF, LILIA WOODS, University of South Florida — The isolation of graphitic nanostructures and their potential applications for novel devices have spurred new interest in the properties of low dimensionality systems. One important interaction in the sub-micron scale is the van der Waals/Casimir force. The general Casimir force between two planes in terms of the dielectric response of the materials was originally formulated by Lifshitz, which was subsequently generalized to two dimensional systems. In this talk, the formulation of the non-retarded dispersive force in terms of the dielectric response functions for quasi-one dimensional systems will be discussed. Results from the application of the developed theory to the interaction between graphene nanoribbons will be presented.

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