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**Plasmon excitations of multi-layer graphene interacting with a conducting substrate** PAULA FEKETE, US Military Academy at West Point, NY, GODFREY GUMBS, Hunter College, City University of New York — We generalize the procedure for calculating the plasmon excitations of a 2D graphene layer that is Coulomb-coupled to a thick conducting substrate to the case when there is an arbitrary number of layers. In this work, we will present results for the plasmon excitations for up to five layers with arbitrary separation, energy gap between the valence and conduction bands for graphene and doping concentrations. Our procedure involves determining the inverse dielectric function for the composite hybrid system in the random-phase approximation (RPA). Effects due to nonlocality will be investigated.

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