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Magnetoplasmons in Graphene Multilayers GODFREY GUMBS, Hunter College of CUNY, OLEG BERMAN, NYC College of Technology of CUNY — With the use of a massless Dirac-fermion band structure, we calculate the dielectric response function for magnetoplasmons in multi- layered graphene. The ambient quantizing magnetic field is perpendicular to the plane of the graphene layers which are embedded in a background dielectric medium. We carry out numerical calculations when only the highest valence band is populated and completely full at $T = 0$ K. Transitions between the highest valence band and the lowest three conduction bands yield the magnetoplasmon dispersion relation between the plasmon excitation energy and the in-plane wave number. We analyze the instability of these modes by solving the dispersion equation in the complex frequency plane as well as examining the rate of transfer of energy between the layered structure and a charged particle current parallel to the graphene layers.

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