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Magnetoelectronic excitations in monolayer graphene JHAO-YING WU, Department of Physics, National Cheng Kung University, MING-FA LIN, DEPARTMENT OF PHYSICS, NATIONAL CHENG KUNG UNIVERSITY TEAM — Coulomb excitation of monolayer graphene in the presence of a magnetic field is studied by the tight-binding model and the random phase approximation. The energy-loss spectrum exhibits many peak structures and the most prominent ones can be identified as the collective excitations mainly coming from the longitudinal charge oscillation. The plasmon frequency and strength oscillate with the transferred momentum because of the competition between the Coulomb interaction and the Lorentz force. The resonant inelastic light-scattering measurements are available in verifying the predicted results.

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