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Graphene Energy Loss Spectroscopy for Perpendicular Particle Incidence VASSILIOS FESSATIDIS, ANTONIOS BALASSIS, Fordham University, NORMAN J.M. HORING, Stevens Institute of Technology — In this work we determine the energy loss of a fast charged particle probe moving perpendicular to a two-dimensional ($2D$) graphene sheet. The response dynamics of the $2D$ graphene sheet are modeled using the random phase approximation in the degenerate limit (zero temperature). We analyze the energy loss of the probe particle for normal incidence to the graphene sheet as a function of its velocity, examining contributions from both the particle-hole and plasmon excitations.

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