

Abstract Submitted
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Plasmons for Coulomb Coupled Spherical Shells ANTONIOS BALASSIS, Fordham University, ANDRII IUROV, GODFREY GUMBS, Hunter College of the CUNY — We report calculations of the collective plasmon excitations for an electron gas confined to the surface of a spherical shell. The energy spectra of the plasmons and particle-hole modes are presented as functions of the radius of the shell as well as the angular momentum quantum number L . We compare results for the plasma excitations for a single shell, a pair of concentric shells as well as when two shells have their centers separated by a distance which exceeds the sum of the radii of the two shells. For the single shell and pair of concentric shells, the plasma modes are labelled by the angular momentum quantum number L only. However, for the pair of non-concentric shells, the plasma modes are labelled by both L and M , the projection of angular momentum on the z axis. These results have been obtained in the random phase approximation (RPA).

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