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**Coulomb Excitations for a Doublet of Spherical Two-dimensional Electron Gases** GODFREY GUMBS, Hunter College, CUNY and Donostia International Physics Center (DIPC), San Sebastian, Spain, ANDRII IUROV, Hunter College, CUNY, ANTONIOS BALASSIS, Fordham University, New York, DAN-HONG HUANG, Air Force Research Laboratory — The plasmon excitations for a pair of Coulomb-coupled non-concentric spherical two-dimensional electron gases (S2DEG's) have been investigated. Our results show that the plasmon excitations depend on the orientation with respect to the external electromagnetic probe field. The origin of this anisotropy of the inter-sphere Coulomb interaction is due to the directional asymmetry of the electrostatic coupling of electrons in excited states which depend on both the angular momentum quantum number  $L$  and its projection  $M$  on the axis of quantization taken as the probe  $\mathbf{E}$ -field direction. Numerical results showing the dependence of plasmon excitation energies on orientation of the doublet will be discussed as the separation between S2DEG's is varied.

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