

Abstract Submitted
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Novel size effects on magneto-optics in the spherical quantum dots M. KUSHWAHA, Rice University — We embark on investigating the magneto-optical absorption in *spherical* quantum dots *completely* confined by a harmonic potential and exposed to an applied magnetic field in the symmetric gauge. This is done within the framework of Bohm-Pines' RPA that enables us to derive and discuss the full Dyson equation that takes proper account of the Coulomb interactions. Intensifying the confinement or magnetic field and reducing the dot-size yields a blue-shift in the absorption peaks. However, the size effects are seen to be predominant in this role. The magnetic field tends to maximize the localization of the particle, but leaves the peak position of the radial distribution intact. The intra-Landau level transitions are forbidden.

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