



ID de Contribution: 30

Type: Non spécifié

## Spectral and entanglement properties of the Gaussian quantum dot

*jeudi 16 octobre 2014 17:40 (40 minutes)*

The stability of the quasi one-dimensional quantum dot composed of two Coulombically interacting electrons confined in an inverse Gaussian potential is discussed. Apart from bound states, the system exhibits resonances that are related to the autoionization process. Employing the complex-coordinate rotation method, we determine the resonance widths and energies and study their dependence on the longitudinal confinement potential and the lateral radius of the quantum dot. The entanglement properties of the system are analyzed in relation to its stability.

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**Classification de Session:** Scattering and Nuclear Matter