

Abstract Submitted
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Quantum Magnetic Field Effects on the Spectrum of a Double Dot System N.J.M. HORING, Stevens Institute of Technology, J.D. MANCINI, Kingsborough College of CUNY — This work is concerned with electron states and propagation in a two-dimensional quantum double-dot system embedded in a two-dimensional host sheet subject to Landau quantization. In particular, the dynamical Green's function and energy spectrum are evaluated with the two dots represented by Dirac delta function potentials. The integral equation for the double-dot Schrödinger Green's function is solved in closed form in terms of the infinite sheet Green's function for two-dimensional electrons subject to Landau quantization with no quantum dots. The dispersion relation for the double dot sub-band energies is obtained by analyzing the (frequency) poles of the Green's function. The proliferation of energy levels due to Landau quantization is examined in detail.

Vassilios Fessatidis
Fordham University

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