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Magneto-Dynamics of a Double Quantum Dot System N.J.M. HORING, D. MIESSEIN, Stevens Inst. of Tech., L.Y. CHEN, University of Texas at San Antonio, QEPT TEAM — We have examined the microscopic dynamics of a double quantum dot system modeled by a potential having two three-dimensional Dirac delta functions of generally unequal strengths separated in position by$\vec{a}$:

$$V(\vec{r}) = -\alpha_1 \delta^{(3)}(\vec{r} - \vec{a}/2) - \alpha_2 \delta^{(3)}(\vec{r} + \vec{a}/2).$$

While these delta function potentials individually support a single energy level, the introduction of a strong magnetic field gives rise to Landau quantization and a plethora of energy levels. The relative magnitude of α_1/α_2affects the bonding/antibonding character of the states, as well as the multiplicity of levels induced by magnetic quantization.

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