Magneto-Dynamics of a Double Quantum Dot System

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

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 $\alpha_1/\alpha_2$ affects the bonding/antibonding character of the states, as well as the multiplicity of levels induced by magnetic quantization.