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Effects of a Parallel Magnetic Field on Double-Quantum-Well Electron Dynamics NORMAN HORING, BING DONG, HONG-LIANG CUI, Department of Physics and Engineering Physics, Stevens Institute of Technology, Hoboken, New Jersey 07030 — We examine electron dynamics in a narrow double-quantum-well system subject to a parallel magnetic field of arbitrary strength. In this, we derive an explicit analytical closed-form solution for the Green's function for Landau-quantized electrons in skipping states of motion between the walls of the thin individual quantum wells, as well as in tunneling states between the two wells; all coupled with in-plane translational motion and hybridized with the zero-field lowest subband energy eigenstates.

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