

# Stability Diagram of a Serial Quantum Dot System

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We present a new method to construct a stability diagram of a serial quantum dot system. The partition function and average charge numbers of the system were calculated by means of imaginary-time path integrals. Consequently, the stability diagram for the quantum dot system was obtained by projecting the average charge numbers of the system to the gate voltage-phase space. To verify the method, stability diagrams for the triple quantum dot systems were calculated. The diagrams allow the quadruple points and positions in which quantum cellular automata processes occur to be determined.

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