The Comparison between Numerical and Analytical Method for the Calculation of Ground State Energy of Quantum Wells

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Abstract: We have calculated the ground state energy of quantum well with various shapes using numerical method and analytical closed form expressions. For the rectangular shape, the calculation results by both methods are closed each to other. For other shapes such as triangular, trapezoidal and parabolic shapes, there are the large derivations in the compare of these calculations. It caused by that the analytical expressions ignored the higher order Fourier coefficients.

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