

Abstract Submitted
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From simplicity to complexity: Can transcendental equation and transfer matrix enlighten us about the nature of Rashba physics? CHIH-PIAO CHUU, University of Texas at Austin, TX, ROLAND WINKLER, Northern Illinois University, IL, QIAN NIU, University of Texas at Austin, TX — We present an analytic model of Rashba spin-splitting of conduction electrons in asymmetric quantum wells based on transcendental equation and transfer matrix approaches. The sources of asymmetries of quantum wells, such as interface discontinuity, conduction and valence band profiles, external field or presence of a potential gradient, related to Rashba spin-splitting will be discussed. We will use type I and type II semiconductor heterostructure quantum wells for demonstration.

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