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Electron Tunneling in Quantum Rings in an Electric Field OLUWAFEMI ADELEGAN, IGOR FILIKHIN, BRANISLAV VLAHOVIC, JAMES NIMMO, IGOR MARTINYAN, North Carolina Central Univ — Double concentric quantum rings (DCQRs) composed of InGaAs in a GaAs substrate utilizing a ***kp***-perturbation single sub-band approach with the effective potential approach were theoretically studied. Two dimensional (2D) objects were considered. Statistical analysis of these DCQRs in the absence of an applied electric field was compared with these DCQRs when a static electric field was applied to them. The statistical analysis consists of taking the difference of the probability of finding an electron in the inner ring and outer ring, dividing by the sum of these probabilities.

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