## Abstract Submitted for the DAMOP13 Meeting of The American Physical Society

Electron Tunneling in Quantum Rings in an Electric Field¹ OLUWAFEMI ADELEGAN, Physics Department, North Carolina Central University, NC, BRANISLAV VLAHOVIC, Physics Department, North Carolina Central University, NC (Professor), IGOR FILIKIN, Physics Department, North Carolina Central University, NC (Research Professor), SERGEI MATINYAN, Physics Department, North Carolina Central University, NC (Professor), JAMES NIMMO, Physics Department, North Carolina Central University, NC (Research Assistant Professor) — 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 absents of an applied electric field were compared with these DCQRs when a static electric field was applied to them. The statistical analysis consist 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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