Abstract Submitted
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**Tunneling rate in double quantum dots**[1] IGOR FILIKHIN, SERGEI MATINYAN, BRANISLAV VLAHOVIC, North Carolina Central University — We study spectral properties of electron tunneling in double quantum dots (DQDs) (and double quantum wells (DQWs)) and their relation to the geometry. In particular we compare the tunneling in DQW with chaotic and regular geometry, taking into account recent evidence about regularization of the tunneling rate [1] when the QW geometry is chaotic. Our calculations do not support this assumption. We confirm high influence of the QW geometry boundaries on the rate fluctuation along the spectrum. The factors of the effective mass anisotropy and violation of the symmetry of DQD and DQW are also considered. Generally, we found that the small violation of the symmetry drastically affects tunneling. [1] L. M. Pecora, H. Lee, D-Ho Wu, T. Antonsen, M-Jer Lee, and E. Ott, Chaos regularization of quantum tunneling rates, Phys. Rev. E, 83, 065201(R) (2011); L. M. Pecora, H. Lee, D.-Ho Wu, Regularization of Tunneling Rates with Quantum Chaos, arXiv:1205.6771.

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