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Electron Pair Resonance in the Coulomb Blockade MIKHAIL RAIKH, University of Utah, ERAN SELA, University of British Columbia, HEUNG-SUN SIM, Korea Andvanced Institute of Science and Technology, YUVAL OREG, Weizmann Institute of Science, FELIX VON OPPEN, Free University of Berlin — Transport through a nanostructure in the regime of Coulomb blockade is dominated by *elastic* single-electron cotunneling. We study many-body corrections to the cotunneling current via a localized state with energy ϵ_d at large bias voltages V. We show that the transfer of electron pairs, enabled by the Coulomb repulsion in the localized level, results in ionization resonance peaks in the third derivative of the current with respect to V, centered at $eV = \pm 2\epsilon_d/3$. Our results predict the existence of previously unnoticed structure within Coulomb-blockade diamonds. Remarkably, this new structure emerges within the standard Anderson Hamiltonian conventionally used for description of transport through nanostructures.

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