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Luminescence excitation of InAs/GaAs coupled quantum dots
MAURICIO GARRIDO, KUSHAL C. WIJESUNDARA, SWATI RAMANATHAN, ERIC A. STINAFF, Department of Physics and Astronomy, and Nanoscale and Quantum Phenomena Institute, Ohio University, Athens, Ohio 45701, MICHAEL SCHEIBNER, ALLAN S. BRACKER, DAN GAMMON, Naval Research Laboratory, Washington, DC 20375 — An understanding of the excited states in coupled quantum dots is a necessary step in the road towards a coherent control of this system. Photoluminescence excitation studies were performed on an InAs/GaAs coupled quantum dot system embedded in a Schottky diode structure. The ground states of the positive trion, negative trion and neutral exciton are first clearly identified by their photoluminescence spectra in bias maps. Preliminary results are reported on the luminescence excitation spectra of these charge configurations; both near and far away from the region where molecule-like behavior is observed.

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