

Abstract Submitted  
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**Positive correlation in multi-level transport through a tunable quantum dot**<sup>1</sup> YIMING ZHANG, LEONARDO DICARLO, DOUGLAS MCCLURE, Harvard University, MICHIHISA YAMAMOTO, University of Tokyo and SORST-JST, SEIGO TARUCHA, University of Tokyo and ICORP-JST, CHARLES MARCUS, Harvard University, MICAH HANSON, ART GOSSARD, University of California, Santa Barbara — We report measurements of shot noise auto- and cross-correlation in a tunable quantum dot with two or three leads. As the Coulomb blockade is lifted at finite source-drain bias, the current noise evolves from super-Poissonian to sub-Poissonian in the two-lead case, and the cross-correlation evolves from positive to negative in the three-lead case. The observed super-Poissonian noise and positive cross-correlation are shown to be consistent with transport through excited states.

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