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**Ethan W Gwaltney\*** (ewg3@rice.edu). *Dirac operators with operator data of Wigner-von Neumann type.*

In 1929, Wigner and von Neumann were first to demonstrate an embedded pure point in the absolutely continuous spectrum of a Schrödinger operator using an explicit oscillatory  $L^2$  potential. Their original model has since inspired many explorations of exotic spectra. Most of these explorations assumed  $L^2$  decay and none ventured beyond  $L^3$  until Lukić in the 2010s demonstrated and controlled embedded singular spectrum in the absolutely continuous spectrum with  $L^p$  Wigner-von Neumann type potentials, for any positive  $p$ . In this talk, we will present work that demonstrates and controls embedded singular spectrum of Dirac operators with  $L^p$  Wigner-von Neumann type operator data. The analysis in the Dirac setting includes significant alterations from the Schrödinger setting, leading to a  $p$ -dependent critical set reminiscent instead of the literature on orthogonal polynomials on the unit circle. (Received September 21, 2021)