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The Effect of a Lattice Defect on Graphene Landau Levels: A Scanning Tunneling Spectroscopy Study[1] KEVIN D. KUBISTA, DAVID L. MILLER, MING RUAN, WALT A. DE HEER, PHILLIP N. FIRST, Georgia Institute of Technology, GREGORY M. RUTTER, JOSEPH A. STROSCIO, Center for Nanoscale Science and Technology, NIST — We present tunneling differential conductance (dI/dV) spectra and 2D conductance maps acquired over both N- and P-type defects in magnetic fields up to 8 T. The measurements were performed on multilayer epitaxial graphene using scanning tunneling microscopy and spectroscopy at 4 K under ultra high vacuum conditions. Landau levels are found to follow the local potential (determined independently at near-zero magnetic field) until an instability is reached close to the defect. Spectral shifts at high magnetic field are modeled using the low-field-derived potential maps. The source of the tunnel instability will be discussed.

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