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Efros-Shklovskii Coulomb gap in the absence of disorder LOUK RADEMAKER, Kavli Institute for Theoretical Physics, University of California Santa Barbara, SAMIYEH MAHMOUDIAN, Department of Physics and National High Magnetic Field Laboratory, Florida State University, ARNAUD RALKO, SIMONE FRATINI, Institut Neel-CNRS and Universite Joseph Fourier, Grenoble, France, VLADIMIR DOBROSAVLJEVIC, Department of Physics and National High Magnetic Field Laboratory, Florida State University — Certain models of frustrated electron systems have been shown to self-generate glassy behavior, in the absence of disorder. Possible candidate materials contain quarter-filled triangular lattices with long-range Coulomb interactions, as found in the θ-family of organic BEDT-TTF crystals. In disordered insulators with localized electronic states, the so-called Coulomb glass, the single particle excitation spectrum displays the well-known Efros-Shklovskii gap. The same excitation spectrum is investigated in a class of models that display self-generated electronic glassiness, showing pseudogap formation related to the Efros-Shklovskii Coulomb gap. Our study suggests universal characteristics of all electron glasses, regardless of disorder.

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