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Nature of the metal-insulator transition in transition-metal dichalchogenides JOSEPH PRESTIGIACOMO, US Naval Research Laboratory, ANINDYA NATH, George Mason University, THOMAS SUTTO, MICHAEL OSOFSKY, US Naval Research Laboratory — It is well known that disorder and electron-electron interactions can dominate the transport properties of materials near the metal-insulator transition (MIT). However, it remains unclear what role these effects play in the emergence of other properties that often appear at the MIT, such as superconductivity in the transition-metal dichalcogenides MoS2 and WS2. We will attempt to clarify this role by examining the normal-state magnetotransport properties of such materials as they are tuned through the MIT by ionic liquid gating, a method that can drastically vary the carrier concentration to levels usually accessible only by doping while allowing the disorder to remain constant as well.

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