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Constraints on Sub-GeV Dark Matter-Electron Scattering from the DarkSide-50 Experiment DAVID-MICHAEL POEHLMANN, University of California, Davis, DARKSIDE COLLABORATION — The DarkSide-50 experiment uses a two-phase argon time projection chamber to directly search for dark matter interactions. Light dark matter particles can scatter off of bound electrons in the detector, producing ionization signals. These S2-only events in the DarkSide-50 data set are used to place 90% C.L. limits on sub-GeV dark matter-electron scattering rates. I will present these new constraints, along with expected recoil spectra for dark matter-electron scattering in argon.

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