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The HelCat Helicon-Cathode Device at UNM BRICETTE CYRIN, CHRISTOPHER WATTS, MARK GILMORE, TIFFANY HAYES, RALPH KELLY, CHRISTOPHER LEACH, ALAN LYNN, ANDREW SANCHEZ, SHUANGWEI XIE, LINCAN YAN, YUE ZHANG, University of New Mexico — The HelCat helicon-cathode device is a dual-source linear plasma device for investigating a wide variety of basic plasma phenomena. HelCat is 4 m long, 50 cm diameter, with axial magnetic field < 2.2 kG. An RF helicon source is at one end of the device, and a thermionic BaO-Ni cathode is at the other end. Current research topics include the relationship of turbulence to sheared plasma flows, deterministic chaos, Alfvén wave propagation and damping, and merging plasma interaction. We present an overview of the ongoing research, and focus on recent results of merging helicon and cathode plasma. We will present some really cool movies.

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