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**Flow in Smectic Liquid Crystal Films: Examining the Flow Field of a Smectic Liquid Crystal Film due to Fluid Ejected From a Small Nozzle**[1] KYLE FERGUSON, ZHIYUAN QI, CHEOL PARK, JOSPEH MACLENNAN, MATTHEW GLASER, NOEL CLARK, University of Colorado, Boulder — The rheological properties of 2D fluids are well-understood theoretically, but few experiments testing theoretical predictions have been carried out. We have used MX 12805, a smectic C liquid crystal at room temperature, to create quasi-2D films with which to study high-Reynolds number flow. We map the flow field as the fluid is ejected from a thin nozzle into a large reservoir, probing both laminar and turbulent flow. We also attempt to carry out the experiment in a vacuum to study the true 2D-regime; despite encountering experimental difficulties, some useful information can still be gleaned.

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