Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Electrostatic control of instabilities in thick liquid layers ALEXANDER WRAY, University of Strathclyde, RADU CIMPEANU, University of Oxford — We apply a recently developed method for modelling thick flows (Wray et al., 2017) to the Moffatt problem for flow on the outside of a rotating cylinder, and the control thereof using electric fields. Via comparison with Direct Numerical Simulations, we show that good accuracy can be maintained even for thick films at moderate levels of inertia. The nonlocal effect of the electric field solution in particular is examined in detail.

Alexander Wray
University of Strathclyde

Date submitted: 31 Jul 2019 Electronic form version 1.4