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Dissipative particle dynamics simulations of breakup of liquid nanocylinders and nanojets ANUPAM TIWARI, JOHN ABRAHAM, School of Mechanical Engineering, Purdue University, West Lafayette, IN 47907 — Dissipative particle dynamics (DPD) is a coarse-grained mesoscopic method which can be used for modeling sub-micron fluid flows. We use a DPD two-phase model to simulate systems where thermal fluctuations play a significant role. In this work, we present results from a thermally induced breakup of liquid nanocylinders and nanojets. In the former case, we compare the DPD results with Rayleigh's stability criterion. In the latter case, we compare DPD results with molecular dynamics simulations presented in literature.

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