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Elastically-driven surface plumes in rimming flow of a non-Newtonian fluid GABRIEL SEIDEN, VICTOR STEINBERG, Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot 76100, Israel — A polymer solution partially filling a rotating horizontal drum undergoes an elastically driven instability at low Reynolds numbers. This instability manifests itself through localized plumelike bursts, perturbing the free liquid surface. We present experimental results on the dynamics of individual plumes and the statistics pertaining to the complex collective interaction between plumes, which leads to plume coagulation.

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