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Drop pinch-off of concentrated surfactant solutions in the lamellar phase ITAI COHEN, Cornell University, PATRICK SPICER, MARCO CAGGIONI, P&G, JOHN SAVAGE, Cornell University — Droplet pinch-off in air is a common phenomenon that occurs all around us. At the point of pinch-off, the drop radius shrinks to zero in a finite amount of time. The pressure exerted by the interface is inversely proportional to the minimum radius and becomes singular at Pinch-off. In Newtonian fluids, this finite time singularity gives rise to universal features in the pinch-off process that can be described by similarity solutions for the fluid air interface. In this talk I will address the question of how this process is altered when observed in concentrated surfactant solutions that are in the lamellar phase. Remarkably we find that pinch-off in these systems is a mix between universal and non-universal behavior.

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