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**Marangoni and Gibbs elasticity of flowing soap films** ILDOO KIM, AAKASH SANE, SHREYAS MANDRE, Brown University — A flowing soap film has two elasticities. Marangoni elasticity dynamically stabilizes the film from sudden disturbance, and Gibbs elasticity is an equilibrium property that influences the film's persistence over time. In our experimental investigation, we find that Marangoni elasticity is 22 mN/m independent of the film thickness. On the other hand, Gibbs elasticity depends both on the film thickness and the soap concentration. Interestingly, the soap film made of dilute soap solution has the greater Gibbs elasticity, which is not consistent to the existing theory. Such discrepancy is originated from the flowing nature of our soap films, in which surfactants are continuously replenished.

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