

Abstract Submitted
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Soap Film Hydrodynamics: In Color, and In Black and White
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bubbles or films arise due to interference between light reflected from two surfactant-
laden surfaces that are ~ 100 nm - 10 micron apart. Sandwiched between these
interfacial layers is a fluid that drains primarily under the influence of gravitational
and capillary or interfacial forces, including disjoining pressure. Below 50 nm the
thin films appear as black. We experimentally follow the drainage kinetics of soap
films using imaging & color science and UV-Visible spectroscopy. We find fascinating
examples of two-dimensional hydrodynamics and unexplained, if not unprecedented,
drainage kinetics.

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