NAU

NORTHERN ARIZONA UNIVERSITY

Department of Mathematics and Statistics Colloquium
Tuesday, April 23, 2019
AMB 164   4:00 pm

The Mathematics of Capillary Interfaces

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Abstract

Capillarity is the study of the interfaces between two immiscible liquids, or between a liquid and air. The study of capillary interfaces is an important research area due to its prominent roles in soil science, plant biology, and the automobile industry, among others. These interfaces are deformable: they are free to change their shape in order to minimize their surface energy. Using ideas from geometry and calculus, this talk will explore why capillary interfaces take the shapes they do. We will analyze two basic capillary geometries: a soap film between two vertical rings and a liquid drop on a solid surface. The presentation will conclude with interesting experimental results and numerical simulations.

Refreshments at 3:45