Culinary Fluid Mechanics and Other Currents in Food Science

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Abstract

Innovations in fluid mechanics are leading to better food since ancient history, while creativity in cooking inspires applied and fundamental science. In this talk, I will discuss how recent advances in hydrodynamics are changing food science, and how the surprising phenomena that arise in the kitchen lead to discoveries and technologies across the disciplines, including rheology and soft matter. Central topics include cocktails and champagne (multiphase flows), whipped cream (complex fluids) and pancake making (viscous flows). For every topic, I will present the state-of-the-art knowledge, the open problems, and likely directions for future research.