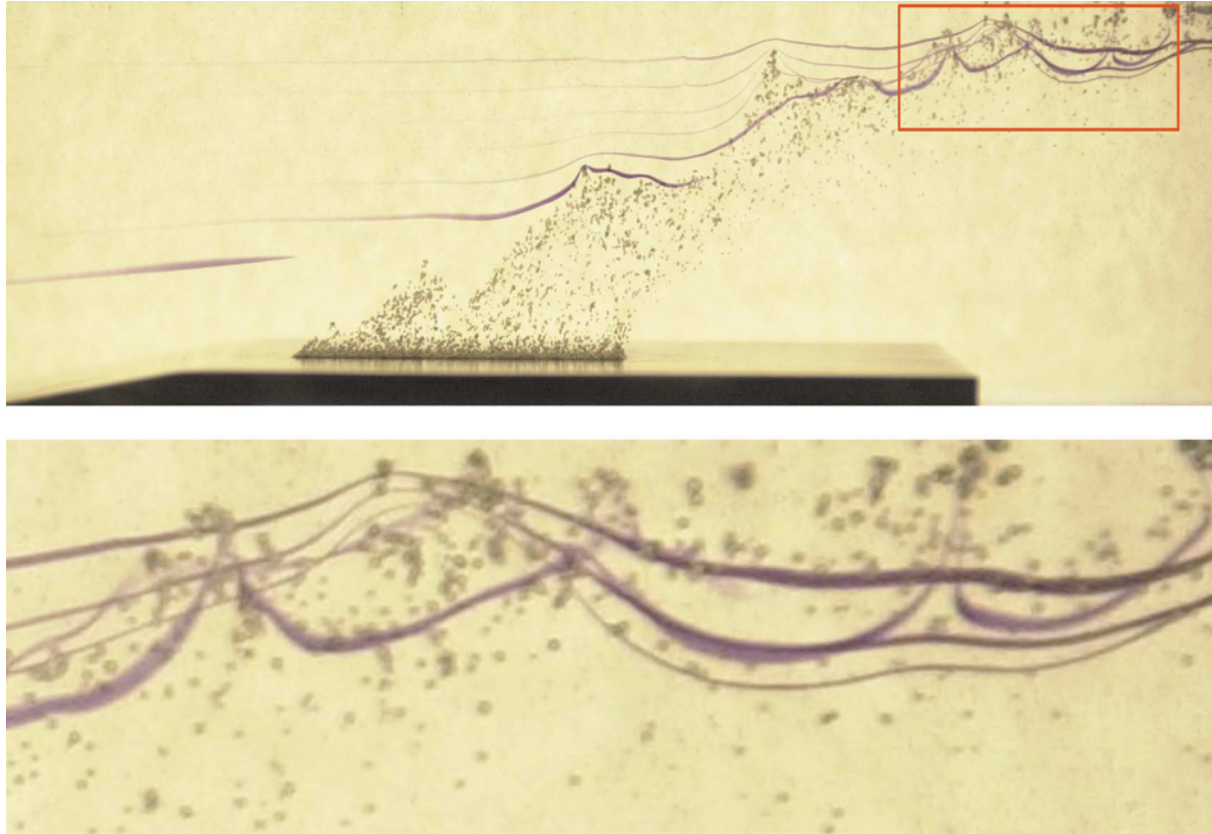


Dye Interaction with Rising Bubbles in a Crossflow

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The figure shows the interaction between rising bubbles and dye injected upstream. The bubbles are created by a reaction between the working fluid (a mixture of hexanoic acid and mineral oil) and sodium embedded in a nonreacting metal plate. The Reynolds number is 350, based on the length of the duct. Along the leading edge of the bubbles, one observes a billowing effect, due to the deformation of the boundary layer profile caused by the rising bubbles and the subsequent growth of the Kelvin-Helmholtz instability. In the closeup, the bubbles interact both in groups and individually with the dye filaments. This work was funded by a grant from the U.S. Department of Energy, Environmental Management Science Program.