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**Experimental study of adsorption of particles at two-fluid interfaces** VADIM LINEVICH, SHRIRAM PILLAPAKKAM, Temple University, PUSHPENDRA SINGH, New Jersey Institute of Technology — The inertia of a particle plays an important role in its motion in the direction normal to a two-fluid interface, and in determining its adsorption trajectory. Although the importance of inertia diminishes with decreasing particle size, on an air-water interface the inertia continues to be important even when the particle size is as small as few nanometers. We have recently shown that the motion of particles in the direction normal to the interface while being adsorbed gives rise to a secondary lateral flow on the interface that causes newly adsorbed particles to disperse. The goal of this study is to experimentally study the adsorption trajectory of particles at two-fluid interfaces. Specifically, we will analyze the effect of particle size on the adsorption trajectory of a single particle, as it is being trapped at an air-water interface. The diameter of a particle will be varied between $\sim$ 100 - 1000 microns. Our experimental setup consists of a high speed camera with a recording speed up to 3000 frames per second which is connected to a horizontal microscope. Captured high speed videos are analyzed to determine the frequency and the amplitude of oscillation during adsorption.

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