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Experimental study of the interaction of a bubble with an inclined wall C. BARBOSA, R. ZENIT, Universidad Nacional Autonoma de Mexico, D. LEGENDRE, Institut de Mecanique des Fluides de Toulouse — Bubbly flows are very common in many engineering applications and natural flows. The interaction of bubbles with containing walls is very important to understand the properties of the bulk flow. In this study we analyse the interaction of a single air bubble with an inclined wall. Experiments are conducted in a rectangular container in which bubbles are generated using capillary tubes of different diameters. The bubbles collide with a glass wall that can be adjusted to vary its inclination. The motion of the bubble is filmed with a high speed video camera. We observe that, for a horizontal wall, the bubbles collide and bounce repeatedly before arresting against the surface, in accordance with previous studies. For inclined walls, after the collision-rebound process, the bubbles slide over the wall reaching a terminal velocity which depends on the angle of inclination, bubble size and liquid properties. We discuss the nature of the bouncing process and the wall-induced drag for a wide variety of conditions.

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