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**Micro bubbles at interfaces** GHOLAMREZA KESHAVARZI, Harvard University, UNSW, ANNA WANG, Harvard University, TRACIE BARBER, University of New South Wales, VINOTHAN MANOHARAN, Harvard University —
The behaviour of a small micron sized bubbles close to an interface is vital to various interface interaction applications in several industries. Previous studies have focused on understanding the behaviour of large millimetric bubbles reaching an interface. Some of these millimetric bubbles are shown to bounce back [1], while others penetrate and burst on the interface resulting in possible small micron sized bubbles [2]. However, small micron sized bubble may act different. It has been observed that small microbubbles can act as if they are stabilized at the interface without merging to the fluid over the interface. The dynamics of the microbubble adsorption close to an interface has yet to be well understood.In this study we used digital holography microscopy to explore detailed information on the behaviour of the air microbubble at the interface. This study investigates the position and shape of a microbubble with respect to the interface. The dynamic behavior close to the interface along with where the small microbubble is positioned near an interface will help us in understanding the probability of penetration and merging back to the fluid on top. [1]Rise, bouncing and coalescence of bubbles impacting at a free surface, Colloids and surfaces A:Physicochemical and Engineering Aspects, Volume 365, Issues 1-3, pp. 36-762 (2010) [2]Daughter bubble cascades produced by folding of ruptured thin films, Nature, Volume 465, Issue 7299, pp. 759-762 (2010)

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