

Mean Motion Induced in a Liquid by Rising Bubbles

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We report experiments on the mean motion generated by a uniform injection of bubbles in a uniform liquid flow. The Reynolds number of the relative motion is high, the Weber number is moderated and the void fraction is varied up to 15%. With a newly developed methodology, we estimate the statistics of the liquid velocity conditioned or not by the presence of the bubbles. We therefore discuss the displacement of liquid induced by the relative motion of the bubbles. We discuss drift flux models as developed by Kowe et al (1988) and more recently by Eames et al (2003). An attempt to take into account wakes effects in such models is also presented

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