

Abstract Submitted
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Zigzagging bubbles rising side by side TOSHIYUKI SANADA, DAIJI SONE, TAKAYUKI SAITO, Shizuoka University — The interaction between zigzagging bubbles ($d=2.9\text{mm}$) rising side by side and its surrounding liquid motion in quiescent water were experimentally investigated. Hypodermic needles and a bubble generator utilizing pressure oscillation were employed to exactly extract and highly reproduce the interaction between the liquid-phase motion and bubble motion at the collision. The recursive cross correlation PIV technique made it possible to obtain the accurate velocity field of the surrounding liquid motion of a pair of bubbles. The experiments were conducted by changing the initial bubble distance. As a result, the two types of velocity fluctuation of bubbles were mainly observed after the collisions. The first case, only the horizontal velocity of each bubbles obviously decreased. The second case, both the horizontal and the vertical velocity decreased. This difference is considered to be due to the different surrounding liquid motion, especially the formation of vorticity.

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