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**Experimental study on the motion of a pair of bubbles in quiescent liquids** HIROAKI KUSUNO, TOSHIYUKI SANADA, Shizuoka Univ. — Understanding of the bubble-bubble interaction problem is important step to achieve more accurate bubbly flow simulation. Some theoretical models of bubble-bubble interaction have been proposed. And some numerical results have also been reported. However, the experimental verifications are insufficient. In this study, we experimentally investigated the motion of a pair of bubbles initially positioned in-line configuration in ultrapure water or an aqueous surfactant solution. The bubble motion were observed by two high speed video cameras. The bubbles Reynolds number was ranged from 50 to 300. In ultrapure water, initially the trailing bubble deviated from the vertical line on the leading bubble owing to the wake of the leading bubble. And then, the slight difference of the bubble radius changed the relative motion. When the trailing bubble slightly larger than the leading bubble, the trailing bubble approached to the leading bubble due to it's buoyancy difference. The bubbles attracted and collided only when the bubbles rising approximately side by side configuration. In addition, we will also discuss the motion of bubbles rising in an aqueous surfactant solution.

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