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Contact time of a pair of bubbles in an acoustic field MINORI SHIROTA, Hirosaki University, HIROKI MIYAMAE — Contact time of a pair of bubbles in an acoustic field is investigated experimentally. Pairs of bubbles of about 0.1 mm in radius were exposed in an acoustic field of about 30 kHz. The bubbles were generated at T-shaped microfluidic junction in silicone oil of 50 cSt with actively controlled gas pressure change. These bubbles were then introduced into an acoustic levitator commonly used in single bubble sonoluminescence experiment. The contact time of the oscillating bubbles were quantitatively evaluated using high-speed imaging technique. Bubbles with in-phase volume oscillation attracted each other due to secondary Bjerknes force and finally coalesced. We observed bubbles smaller than resonant sizes at large separate distance deforms greatly and coalesced immediately when they touch, while bubbles of the resonant sizes were kept contacting such long time as over 100 periods of forcing.

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