

Abstract Submitted  
for the DFD09 Meeting of  
The American Physical Society

**Shape oscillation of bubbles in the acoustic field<sup>1</sup>** KEISHI MATSUMOTO, Div. Mechanical Engineering, Graduate Sch. Science & Technology, Tokyo University of Science, ICHIRO UENO, Dept. Mechanical Engineering, Fac. Science & Technology, Tokyo University of Science — We focused on dynamics of multiple air bubbles exposed to ultrasonic wave while ascending in water. The bubbles were injected into the pool filled with water from a vertical capillary tube, and then the ultrasonic wave of 20 kHz was applied from above toward the bubbles. Volume and shape oscillations of the bubbles were captured by a high-speed camera at frame rates up to 40000 fps with a back-lighting system. We realized three major phenomena in this experiment; excitations of surface wave, volume oscillation, and shape oscillation. In the present study we paid our special attention to the shape oscillation and the transition from the volume to the shape oscillations of the bubbles in a row. Effects of the bubble volume and the distance between the bubbles were examined. We got relation among distinct mode number  $n$ , which is order of harmonic, bubble diameter, and distance of the bubbles.

<sup>1</sup>A part of this study is partly supported by TEPCO Research Foundation.

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Date submitted: 11 Aug 2009

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