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Experimental study on the manipulation of microbubbles using ultrasound field SHU TAKAGI, TAICHI OSAKI, TAKASHI AZUMA, The University of Tokyo, MITSUHISA ICHIYANAGI, Sophia University, YOICHIRO MATSUMOTO, The University of Tokyo — Non-contact manipulation techniques of microbubbles are developed by controlling the ultrasound filed. A plane standing wave-type, a ring-type and the focused-type ultrasound are used to manipulate microbubbles. It is shown that Primary Bjarknes force is well-utilized to control the position of microbubble. Microbubble clusters are observed in the actual experiments and they show the complicated behaviors as bubble clusters. These behaviors are discussed through the comparison of the experimental observation and theoretical estimation. It is experimentally shown that the size of bubble clusters gradually increases during the irradiation period of ultrasound. These clusters are captured in the central region of focused ultrasound. These clusters, however, suddenly disappear beyond the certain critical size. This type of phenomena will be discussed in the presentation.

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