

Abstract Submitted  
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**Lift Force Acting on the Trailing Bubble in the Leading Bubble's Wake**<sup>1</sup> HIROAKI KUSUNO, Graduate School of Science and Technology, Shizuoka University, TOSHIYUKI SANADA, Department of Mechanical Engineering, Shizuoka University — We compute the three-dimensional motion of two gravity-driven bubbles, where the bubble is in the other bubble's wake, using an adaptive volume-of-fluid method. In contrast to previous axisymmetric predictions, the numerical results show that the relative motions are collision or escaping from the rising line. This difference depends on the condition of the rising path of a single bubble. The trailing bubble feels a positive transverse force in a stable condition, whereas a negative transverse force is critical. We consider this mechanism is closely related to the relationship between the shear-induced lift force experienced by a spherical-like bubble and the reversal lift force due to the wake instability experienced by an oblate spheroidal-like bubble.

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