

第4回航空機による学生無重力実験コンテスト  
(原著論文)

## 微小重力でのシャボン玉の安定性

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### Stability of Soap Bubbles under Microgravity

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#### Abstract

Although everybody knows the beauty of soap bubbles, the physics and chemistry how the bubbles are formed and broken are still open question. In order to understand varieties of mysterious phenomena on soap bubble, a soap bubble experiment under microgravity during a parabolic flight using an airplane (G-II) was conducted, in which we expected longer life time of the bubble because of the uniform thickness of the soap film. The experiment was planned and conducted by undergraduate students of Tohoku University under the framework of the JAXA student program using parabolic flight of an airplane.

Under gravity, the forms of soap bubbles become elongated to the G-direction. From interference fringes, thickness of the soap film could be measured: the thickness of the soap bubble at the top is thinner than at the bottom because of gravity. In contrast, the bubble form became a complete sphere under microgravity, but the surface of the bubble became unstable and waving probably because of the presence of G-gitter. The lifetime of the bubble under microgravity was found to be much longer than under gravity.