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Accumulation structure of low-Stokes-number particles in high-aspect ratio half-zone liquid bridge of high Prandtl number fluid TOMOKI SAKATA, HIROKI SAITO, Division of Mechanical Engineering, School of Science and Technology, Tokyo University of Science, Japan, TAKUMA HORI, Department of Mechanical Systems Engineering, Tokyo University of Agriculture and Technology, Japan, ICHIRO UENO, Research Institute for Science and Technology, Tokyo University of Science, Japan — Various space experiments on the International Space Station (ISS) have been conducted to elucidate the Marangoni convection in liquid bridge formed under the micro-gravity environment. Since the cost of space experiments is apparently expensive, it is necessary to accumulate knowledge of the phenomena on ground as much as possible in term of preliminary experiments. In addition, ground experiments can allow us to clarify the effects of gravity. We focus on the particle accumulation structure (PAS) produced by the thermocapillary effect in a half-zone liquid bridge on the ground. To compare with the PAS realized in Japanese Experimental Module Kibo in the ISS, the PAS in high-aspect ratio half-zone liquid bridge of high Prandtl number fluid is studied. The role of gravity is discussed through the comparison of these experimental results also together with linear stability analysis.

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