

Abstract Submitted
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Marangoni Instabilities in Small Circular Containers under Microgravity¹ DIETRICH SCHWABE, Physics Institute, University of Giessen — Circular containers of various aspect ratios a with flat free upper liquid surfaces were heated from below under microgravity to study the Marangoni instability. We realized “liquid lateral sidewalls” for the containers to come near to the “slippery sidewalls” introduced earlier by theory. The flow structure was visualized by aluminium flakes and recorded on videotape. Different perfect flow structures (azimuthal and radial wave numbers) were observed in the containers with $a = 0.5, 0.75, 1.0, 1.5, 2.0, 4.0$ and 5.0 . The observed scenario compares qualitatively well with the stability curves calculated by other authors. Frequent switching between modes (2,1) and (1,1) was observed in the container with $a = 2$ at supercritical Ma .

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