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**Interfacial instability of rotating liquid-liquid two-phase flow**  
SHUHEI FUJIMOTO, SHIZUO YOSHIDA, YUJI TASAKA, YASUSHI TAKEDA,  
Hokkaido University — Rotating a cylindrical container that contains oil and water deforms the interface between oil and water. While the interface near the center of the container rises up, near the wall of it comes down. Furthermore, certain instability wave propagates on the interface. The aim of this study is to investigate the instability mechanism of the rotating oil-water liquid-liquid two-phase flow. A velocity profile of the rotating flow was analyzed theoretically. The boundary conditions at the oil-water interface are given from a solution of momentum diffusion equation. The theoretical velocity profile was in good agreement with result of flow visualization by using fluorescein dye and hydrogen bubbles.

Yuji Tasaka  
Hokkaido University

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