

Abstract Submitted  
for the DFD05 Meeting of  
The American Physical Society

**Instability of an interface, with large viscosity-contrast, under tangentially oscillatory motion** HARUNORI N. YOSHIKAWA, JOSÉ E. WESFREID, PMMH-ESPCI (UMR7636 CNRS) — We shall present here an instability which initiates a pattern formation on the interface between two viscous fluids, with very strong viscosity contrast, subjected to tangential oscillatory motion at a moderate frequency. We carried out experiments and theoretical studies. Experimental results showed that the first selected wavelength, which is far from the capillary one, is controlled by the oscillation amplitude. A quasi static model is elaborated, predicting the instability threshold and the wavelength dependence on the amplitude, in agreement with the experiments. A detailed analysis reveals that the origin of the instability is not a simple Kelvin Helmholtz type, because the pressure perturbation distribution is different. This difference lies in the contribution of the streaming effect.

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Date submitted: 09 Aug 2005

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