

Abstract Submitted  
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**Influence of Interface Thickness on the Digitation of Miscible Fluids** GEORGES GAUTHIER, FAST UPS Paris11, ALBAN AUBERTIN, JEROME MARTIN, LAURENT TALON, FAST CNRS, DOMINIQUE SALIN, FAST UPMC Paris6 — The influence of the interface thickness on miscible viscous fingering instability, has been studied in a Hele-Shaw cell. Using a pair of fluids with a small density contrast, we took advantage of parabolic flights sequences, to either restore a flat thick initial interface under MACROGRAVITY or get rid of buoyancy effects during the unstable displacement under MICROGRAVITY conditions. The experiments demonstrate that the initial thickness of the interface does not affect significantly the instability mechanism, but only postpones the appearance of the digitation. More precisely, the initial thickness delays the formation of a shock in the base state concentration profile, but the shock formation still triggers the instability.

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