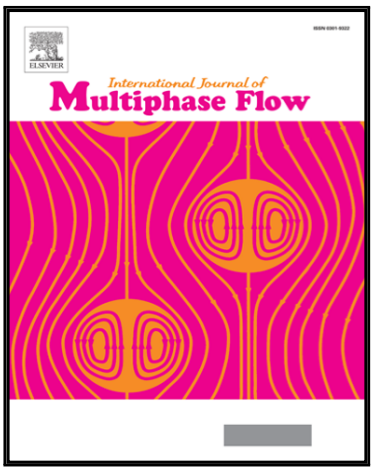

Multi-Scale Analysis of Simulated Capillary Instability

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PII: S0301-9322(16)30576-6
DOI: 10.1016/j.ijmultiphaseflow.2017.03.012
Reference: IJMF 2563

To appear in: *International Journal of Multiphase Flow*

Received date: 27 September 2016
Revised date: 27 January 2017
Accepted date: 16 March 2017

Please cite this article as: Christophe Dumouchel , Wojciech Aniszewski , Trung-Thanh Vu , Thibaut Ménard , Multi-Scale Analysis of Simulated Capillary Instability, *International Journal of Multiphase Flow* (2017), doi: 10.1016/j.ijmultiphaseflow.2017.03.012

Highlights

- DNS of the capillary instability of liquid ligaments are performed
- 2-D and 3-D multi-scale analyses of the capillary instability are performed
- The small and large scale dynamics are identified and mathematically described
- The contraction mechanism at small scale is always preceded by an elongation mechanism
- The specific-surface-area budget depends on the strength and duration of the elongation mechanism