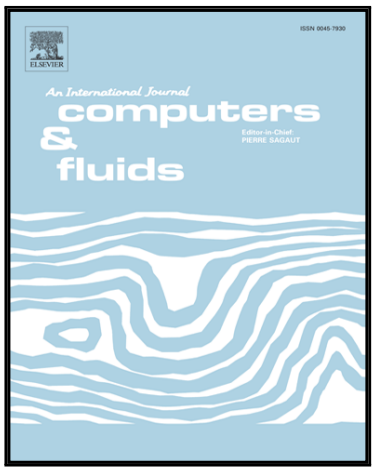

A wavelet based numerical simulation technique for two-phase flows using the phase field method

Jahrul M. Alam

PII: S0045-7930(17)30027-0
DOI: 10.1016/j.compfluid.2017.01.015
Reference: CAF 3381

To appear in: *Computers and Fluids*

Received date: 24 August 2016
Revised date: 16 December 2016
Accepted date: 17 January 2017

Please cite this article as: Jahrul M. Alam, A wavelet based numerical simulation technique for two-phase flows using the phase field method, *Computers and Fluids* (2017), doi: 10.1016/j.compfluid.2017.01.015

Highlights

- A wavelet based phase-field modelling technique for multiphase flow is presented.
- The Jacobian free Newton-Krylov method is employed to achieve a near optimal computational performance.
- The accuracy of the Allen-Cahn phase field simulation is validated against experimental data.
- Instability of a rising gas bubble is observed at moderately high Peclet number.