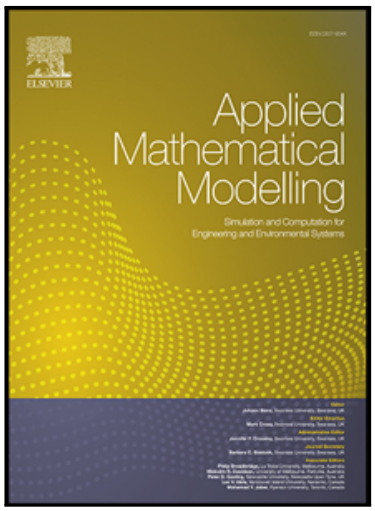

Unresolved CFD-DEM modeling of multiphase flow in densely packed particle beds

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PII: S0307-904X(17)30737-0
DOI: 10.1016/j.apm.2017.12.008
Reference: APM 12088

To appear in: *Applied Mathematical Modelling*

Received date: 29 August 2017
Revised date: 20 November 2017
Accepted date: 4 December 2017

Please cite this article as: M. Vångö, S. Pirker, T. Lichtenegger, Unresolved CFD-DEM modeling of multiphase flow in densely packed particle beds, *Applied Mathematical Modelling* (2017), doi: 10.1016/j.apm.2017.12.008

Highlights

- A VOF-DEM model was implemented in open-source softwares and used to study drainage in densely packed particle beds.
- Instability issues inherent to the model were found for particle beds with particle densities lower than the fluid's.
- A smoothing approach was proposed to deal with these instabilities by filtering high frequency pressure fluctuations.
- Experiments were conducted and the model successfully reproduced the measurements and observations.
- Different drainage was observed when accounting for the particle bed dynamics of a demonstration blast furnace hearth.