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On the stability of Taylor bubbles inside a confined highly porous medium

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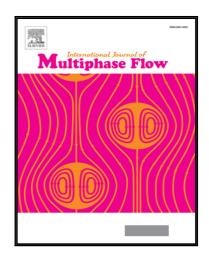
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Highlights

- Gas-liquid flow crossing an innovative porous medium of high porosity is analyzed.
- A modified Weber number controls the hydrodynamic regime of the two-phase flow.
- The bubble length entering the open cell solid foam controls the transition.
- A scaling model predicts the critical bubble length in agreement with experiments.

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