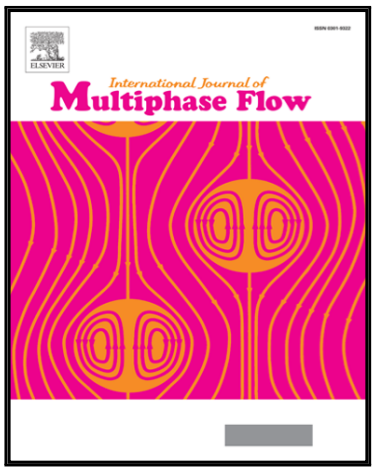

A broadly-applicable unified closure relation for Taylor bubble rise velocity in pipes with stagnant liquid

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Highlights

- Taylor bubble velocity for inclined pipes with stagnant liquid for an ample range of properties and inclination angles that outperforms current correlations
- The Taylor bubble velocity correlation is extracted from an ample numerical database generated with 3D CFD Direct Numerical Simulations with level set as the Interface Tracking Method
- Taylor bubble velocity correlation for use in slug flow mechanistic models
- CFD numerical method validated with vertical and inclined pipe experiments