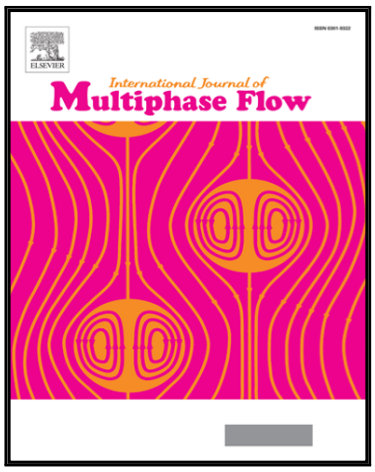

The significance of drop non-sphericity in sprays

Rainer N. Dahms, Joseph C. Oefelein

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Highlights

- Multicomponent real-fluid thermodynamics facilitate accurate simulations of drop dynamics
- Large-eddy simulations capture the coupling with gas phase dynamics
- Effects of drop non-sphericity on drag, evaporation, and heating are quantified
- Models to extend existing spherical drop models to include drop non-sphericity are proposed
- A new set of equations is proposed to improve breakup modeling