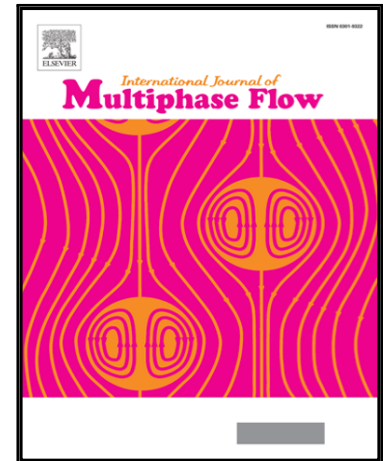


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String Flash-Boiling in Gasoline Direct Injection Simulations with
Transient Needle Motion

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Highlights

- A CFD study of multiphase GDI internal flow and near-field spray is described.
- Excellent agreement to experimental ROI is achieved with transient needle motion.
- Qualitative agreement to experimental imaging in the near-field is shown.
- Complex internal nozzle flow is shown to influence ROI and spray angle.
- Unsteady vortices cause string flash-boiling and expansion of the near-field spray.

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