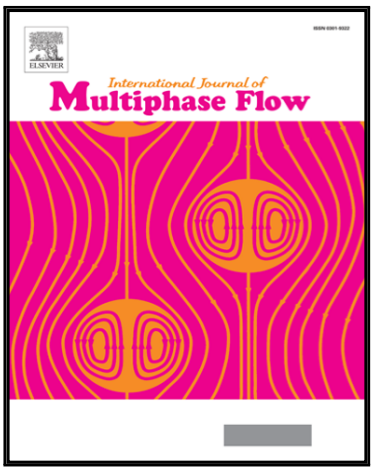

Large Eddy Simulation of liquid jet primary breakup in supersonic air crossflow

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Highlights:

- A sharp interface method for atomization in supersonic gas flow is proposed.
- Breakup morphology of liquid jet in supersonic air crossflow are well captured
- Two kinds of vortices relating to surface and column breakup modes are observed.
- Disintegrating aerodynamic force is weakened by strong shock ahead of liquid jet.
- Surface wavelength implies that Rayleigh-Taylor instability induces surface waves.