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Multiscale simulations and experiments on water jet atomization

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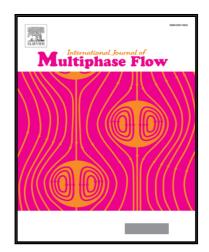
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#### ACCEPTED MANUSCRIPT

### Highlights

- We present a RANS-based multiscale model for simulation of primary atomization.
- Phase-Doppler anemometry (PDA) experiments were done to characterize water sprays.
- The model is validated against experimental data using a point-bypoint comparison.
- The model predicts the size and velocity distributions of droplets reasonably.
- The model requires relatively low computational effort for modeling high-Re sprays.

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