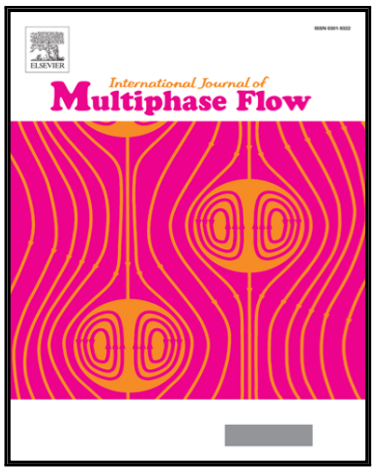

An analytical and semi-empirical model for the viscous flow around a vortex cavity

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Highlights

- An analytical solution for the 2-D viscous flow around a vortex cavity is derived
- The analytical solution is extended with a semi-empirical formulation to allow for vorticity roll-up
- The resulting model for the azimuthal velocity distribution is able to accurately represent experimental data of a wing-tip vortex
- The relation between cavity size and cavitation number is evaluated.