

## APPLICATION OF THE VOLUME OF FLUID TECHNIQUE ON ATOMIZATION SIMULATIONS

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**Abstract.** Atomization is a complex phenomenon, particularly difficult to simulate due to its physical characteristics, such as its long range of scales and discontinuous nature of the interphase. There are several alternatives to represent the interphase. The Volume of Fluid (VoF) is a widely adopted technique that employs a phase volume fraction function to distinguish between the fluids involved. An open-source implementation is available on the the OpenFoam FVM suite for incompressible immiscible flows, called interFoam. This application solves the color function advection equation using High Resolution Schemes limited with a Flux Corrected Transport in conjunction with a compression flux in order to reduce diffuses errors. The momentum equation is solved applying the PISO algorithm. In this work, the solver performance is studied comparing numerical results with experimental data and linear theory solutions. Dynamic mesh refinement is applied to find a high performance setting for long range scales flows. Finally, results related to jet atomization are reported.