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FireExtinction: Multi-Physics Methodology for Phase Change Due to Rapidly Depressurised Two-Phase Flows

Description

A multi-physics methodology is proposed to couple CFD calculations with models for phase change of rapidly depressurised mist of a fire suppression system. The methodology combines existing models with newly developed ideas with considers the coupling between large and small scales. The new models aim to describe the penetration of a two-phase flow and phase transitions into the co-founding space and will be implemented as a user defined function in a tool chain and coupled with the nearfield CFD calculation. Both, a Lagragian and a Eulerian formulation will be followed using existing commercialtools and in-house multiphase solvers. Finally, one experiment is proposed to validate the numerical results in one relevantcase.

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