

Numerical scheme for capturing discontinuities in low Mach flows with phase change

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The aim of this talk is to present a low Mach model for phase change flows in the context of heat exchangers in nuclear cores. Neglecting viscous effects, the solution is subject to jumps in enthalpy and velocity. The numerical scheme has to capture these singularities without spurious oscillations with accurate amplitudes and discontinuity displacements. A numerical scheme that preserves the monotonicity of the solution and catches the discontinuity is presented in the 1D case.

This is a joint work with Gloria Faccanoni from Imath, Université de Toulon, France and Bérénice Grec from MAP5, Université Paris Cité, France.