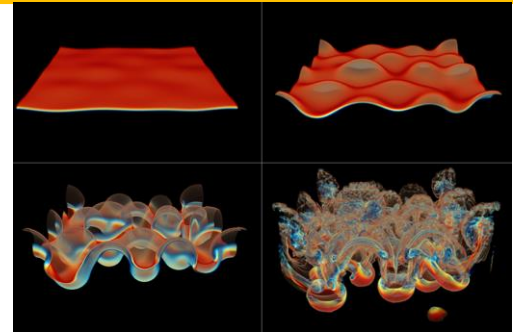


Mixing Dynamics of the Blast-Driven Instability

Benjamin MUSCI



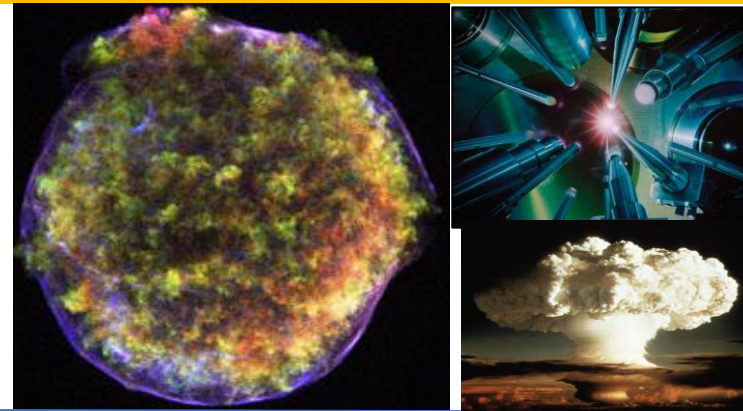
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Blast-Driven Instability

$$\frac{\partial \vec{\omega}}{\partial t} = \frac{1}{\rho^2} (\nabla \rho \times \nabla p)$$

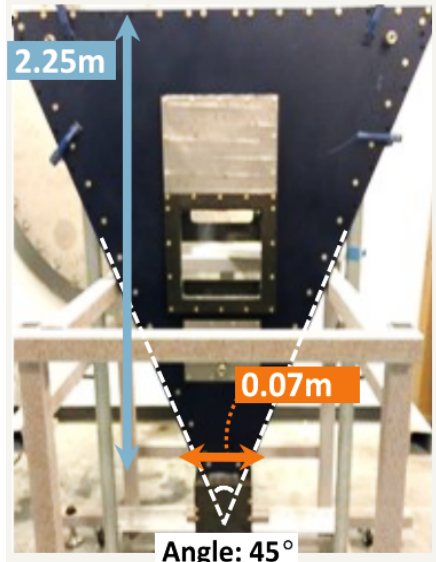


Blast Wave Source

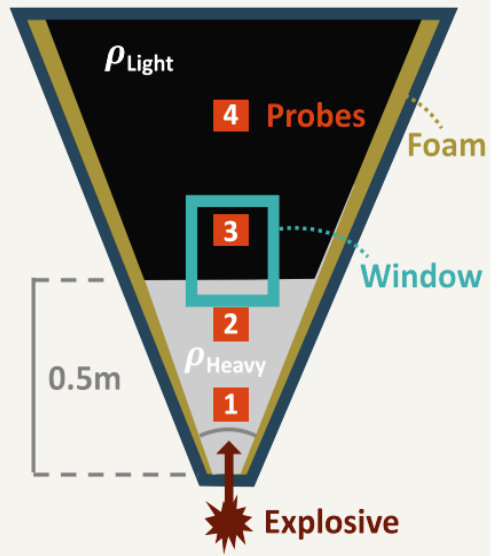
Density difference across an interface

High Speed Experiments

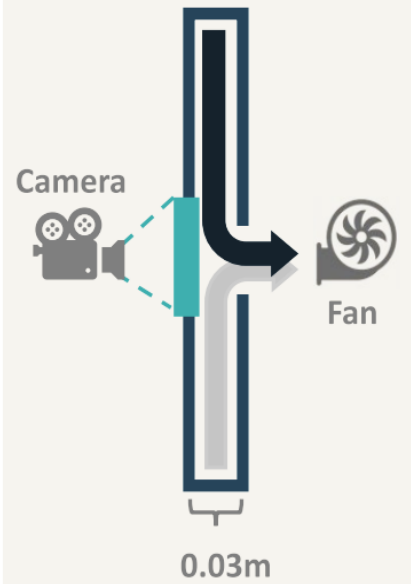
a) Facility Photo



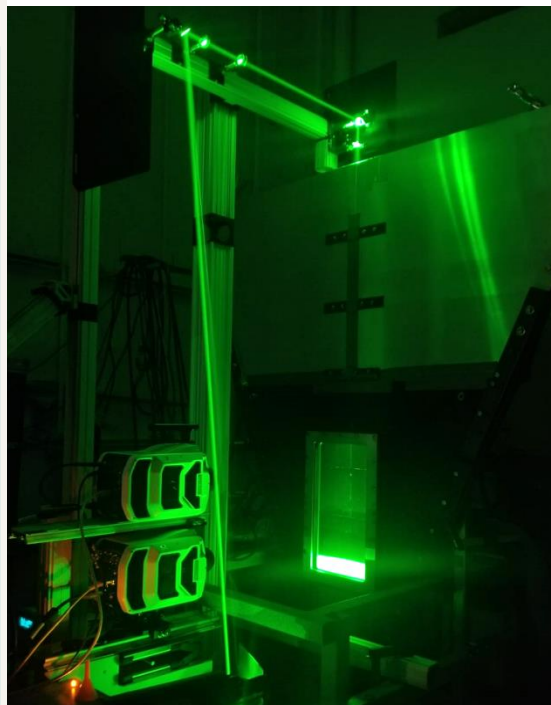
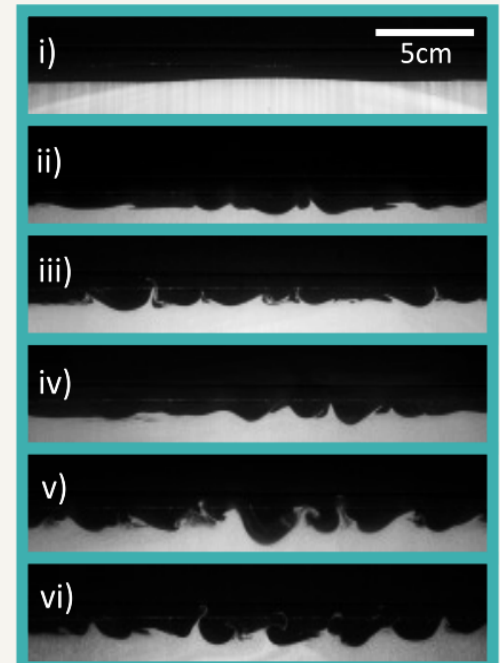
b) Front schematic



c) Side schematic



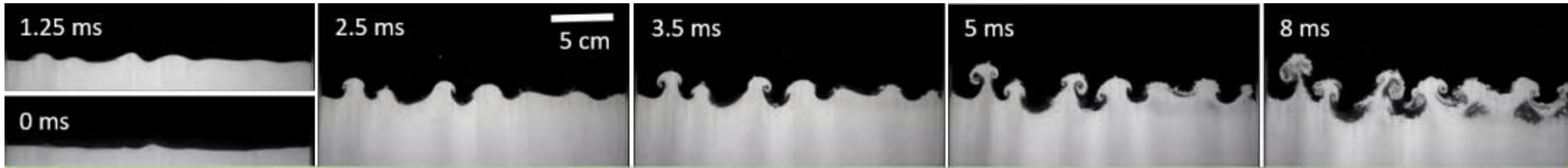
d) Initial Conditions



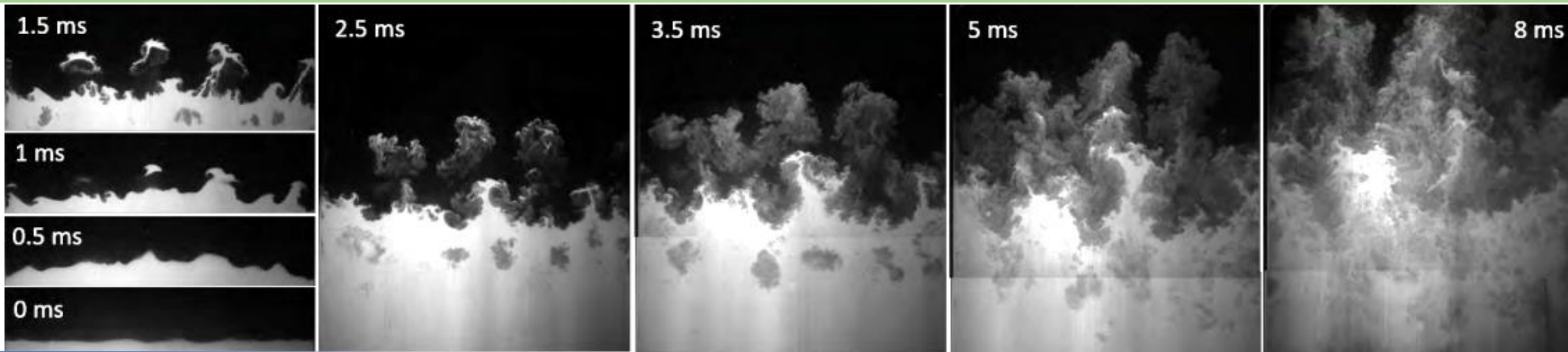
Governing Parameters: Atwood (A) and Mach (M) number

Nonlinear effects primarily linked to changes in Atwood

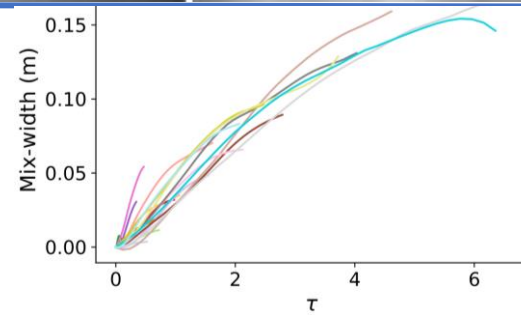
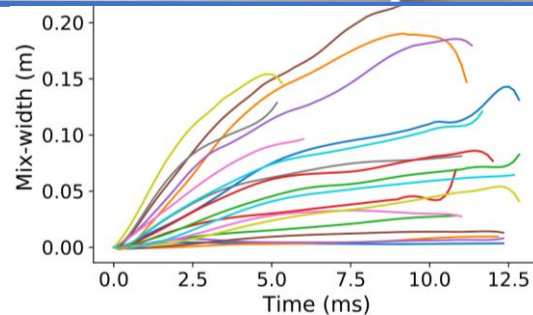
LOW A & M



HIGH A & M



Attempts to estimate vorticity deposition for scaling mixed-width across parameter space



Investigate non-linear features (ejecta, 2nd RTI)

