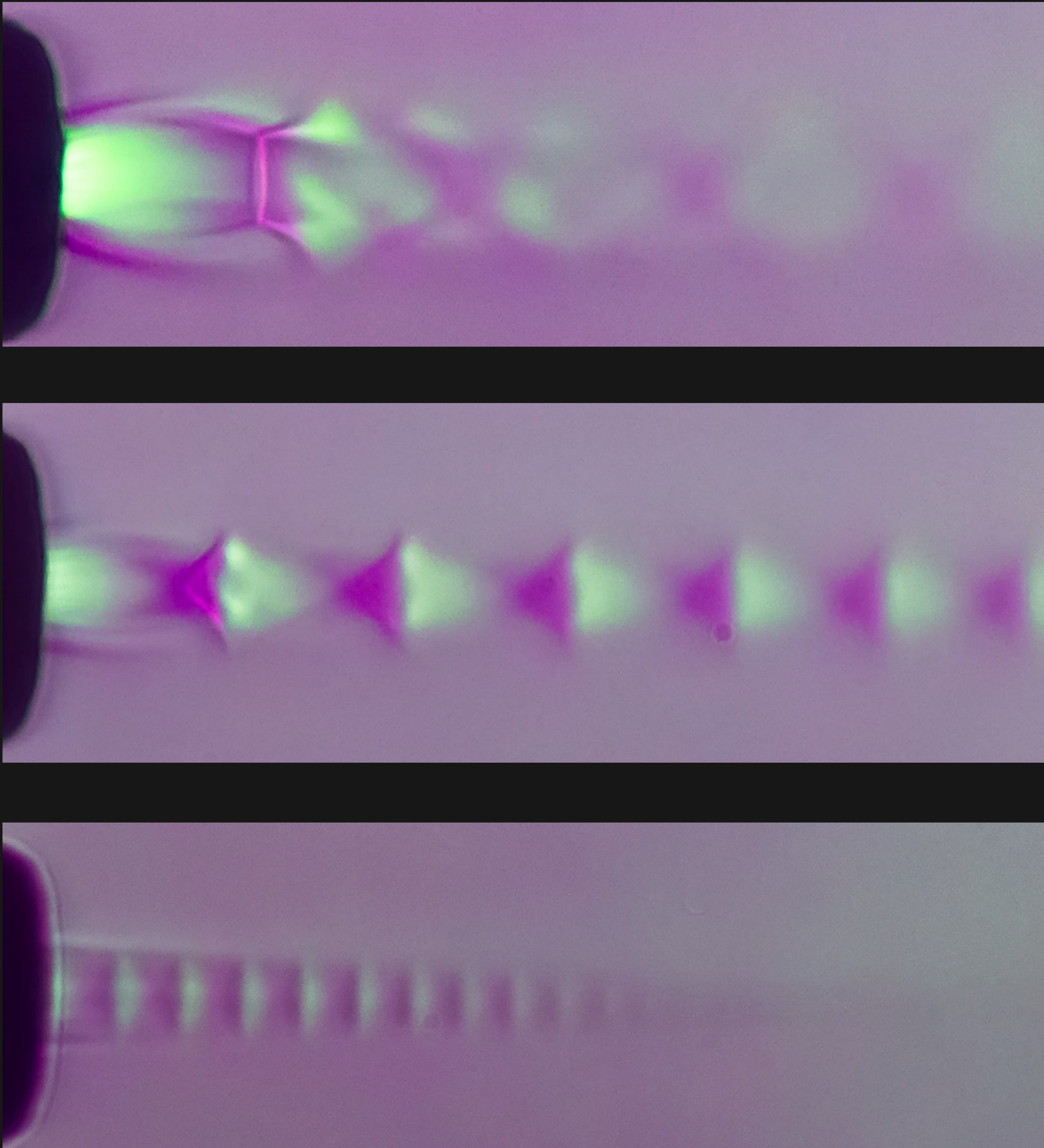


# MACH DIAMONDS NDS

K. Schroeder, C. Thorman, M. May, I. Braaten, J. Ruud, J. Thalakkottor  
Laboratory of Interfacial Transport, Department of Mechanical Engineering, South Dakota Mines

## Experimental



## CFD Simulation



**When the exit pressure of the exhaust from a nozzle is lower than the atmospheric pressure, the phenomenon known as Mach Diamonds occurs. This is often observed in overexpanded nozzles of propulsion systems. To study this intricate flow phenomenon, we employ Color Schlieren Imaging. Our experimental setup involves using compressed air to direct flow through a nozzle at varying exhaust exit pressures to simulate a propulsion system and replicate the phenomena. Furthermore, we verify these findings using computational fluid dynamics.**