

# Shock formation and vorticity creation for compressible Euler

11:30 Friday Nov 13

<https://njit.webex.com/njit/j.php?MTID=m4f4e760ec702fe925441ec8d6d174323>

## Abstract

In this talk, I will discuss a long term project, joint with Tristan Buckmaster and Steve Shkoller, concerning the formation of singularities (shocks) for the compressible Euler equations with the ideal gas law. We provide a constructive proof of stable shock formation from smooth initial datum, of finite energy, and with no vacuum regions. Via modulated self-similar variables, the blow-up time and location can be explicitly computed, and at the blow-up time, the solutions can be shown to have precisely Holder  $1/3$  regularity. Additionally, for the non-isentropic problem sound waves interact with entropy waves to produce vorticity at the shock.

Speaker

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