

**CONSERVATION LAWS WITH NO CLASSICAL RIEMANN  
SOLUTIONS: EXISTENCE OF DAFERMOS PROFILES FOR SINGULAR  
SHOCKS**

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The basic tool in the construction of solutions to the Cauchy problem for conservation laws with smooth initial data is the Riemann problem.

In this talk I will review the results obtained for the solutions to the Riemann problem and present a system of two equations derived from isentropic gas dynamics with no classical solution. I will then use the blowing-up approach to geometric singular perturbation problems to show that the system exhibits unbounded solutions (singular shocks) with Dafermos profiles.