

# VANISHING VISCOSITY AND BURGERS SHOCK FORMATION

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We consider one facet of an old problem: the approximation of 1D inviscid Burgers by its viscous counterpart. This vanishing viscosity limit is well understood around a fully developed shock, but less is known about the moment of shock formation. We develop a matched asymptotic expansion to describe the vanishing viscosity limit of shock formation to arbitrary precision up to the first singular time. At leading order, we identify universal viscous dynamics near the point of shock formation.

This is joint work with Sanchit Chaturvedi.