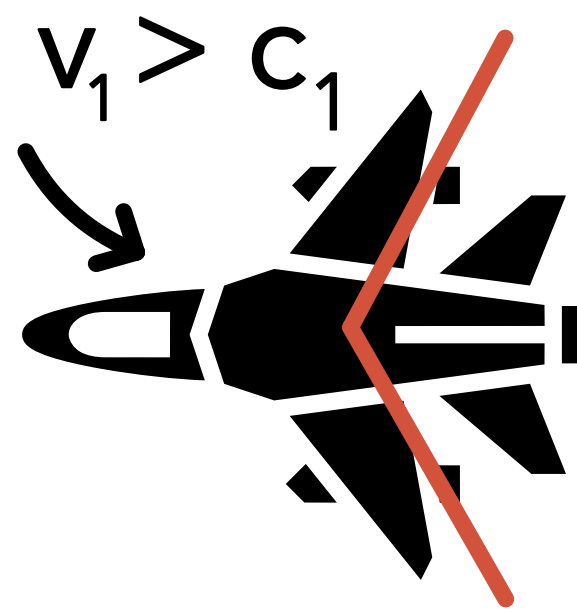


supersonic jet, $v_1 > c_1$

pre-shock



post-shock

normal
shock

$\sim \lambda_{\text{eff}}$

effective
mean free
path

upstream conditions
ahead of normal shock

v_1 in shock frame

P_1, T_1, ρ_1

downstream conditions
behind normal shock

v_2 in shock frame

P_2, T_2, ρ_2

slower, denser warmer

viscous effects dissipate kinetic
energy \rightarrow heat & entropy

viscous effects small; fluid variables linked by jump conditions

X