1142-35-10 **Theodore D. Drivas*** (tdrivas@math.princeton.edu) and **Gregory L Eyink**. *An Onsager Singularity Theorem for Turbulent Solutions of Compressible Euler Equations.*

We prove that bounded weak solutions of the compressible Euler equations will conserve thermodynamic entropy unless the solution fields have sufficiently low space-time Besov regularity. A quantity measuring kinetic energy cascade will also vanish for such Euler solutions, unless the same singularity conditions are satisfied. It is shown furthermore that strong limits of solutions of compressible Navier-Stokes equations that are bounded and exhibit anomalous dissipation are weak Euler solutions. These inviscid limit solutions have non-negative anomalous entropy production and kinetic energy dissipation, with both vanishing when solutions are above the critical degree of Besov regularity. Stationary, planar shocks in Euclidean space with an ideal-gas equation of state provide simple examples that satisfy the conditions of our theorems and which demonstrate sharpness of our L3-based conditions. These conditions involve space-time Besov regularity, but we show that they are satisfied by Euler solutions that possess similar space regularity uniformly in time. (Received August 16, 2018)