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Maximum Entropy Production Rate for Fluid Turbulence

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The amissibility condition of a maximum rate of entropy production is established for solutions of fluid turbulence. The configuration space for these solutions is the L^2 space of incompressible velocity fields. Any probability measure over this configuration space defines a possible solution of the Euler or Navier-Stokes equations. The uniform measure (invariant under translations by elements of configuration space) also known as Lebesgue measure satisfies this admissibility condition. We explore several consequences of this construction. Joint work with Daniel Lazarev, Hamid Said, Gui-Qiang Chen, Min-Chol Lee and Jarret Petrillo will be discussed.

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