

# Spontaneously stochastic solutions from singular initial data

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We analyze inviscid solutions starting from singular initial conditions in turbulence models. Singular initial conditions may result from a finite-time blowup, developed turbulent state, or unstable discontinuity. First, we discuss an example of non-uniqueness: an infinite number of solutions arise depending on a way the viscosity approaches zero. Next, we argue that despite of the non-uniqueness of specific realizations, the probability distribution in the whole set of possible solutions is unique, i.e., there is a unique spontaneously stochastic solution. This phenomenon is explained with ordinary deterministic chaos developing in renormalized variables.