Limit theorems for stochastic inviscid Leray-α model with transport noise

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We consider the stochastic inviscid Leray-α model on the torus driven by transport noise. Under a suitable scaling of the noise, we prove that the weak solutions converge, in some negative Sobolev spaces, to the unique solution of the deterministic viscous Leray-α model. Interpreting such limit result as a law of large numbers, we study the underlying central limit theorem and provide an explicit convergence rate. This talk is based on a joint work with Doctor Bin Tang.