Large Moment Asymptotics for Permuted Stochastic Models

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Abstract: Consider a stochastic process whose (discrete) time parameter is permuted by an independent random variable uniformly distributed on a large permutation group. The concern is the exponential asymptotics of the large moments run by the permuted process. The study is motivated by the needs arising from computing the tail probabilities for the local times (also called intersection local times in some situations) of some multi-parameter stochastic processes. In this talk, I will give two examples in which the moment asymptotics are established and are applied to the study of intersection local times of Brownian motions, and to the study of local times of additive Brownian motions. I will also mention some remaining problems.