

北京师范大学随机数学研究中心
学术报告

题目: **Large deviations for DMZ equation driven by
Levy noise**

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摘要: In this talk, we focus on the asymptotic behavior of the optimal filter where both signal and observation processes are driven by Levy noises. Indeed, we study large deviations for the DMZ equation, which is an SPDE satisfied by the unnormalized filter, in the case that the signal-to-noise ratio is small. Weak convergence approach will be taken. To that end, we first prove the uniqueness of the solution of the controlled Duncan-Mortenson-Zakai and Kushner-Stratonovich equations. For this, we employ a method which transforms the associated equations into SDEs in an appropriate Hilbert space. Next, taking into account the controlled analogue of Zakai and Kushner-Stratonovich equations, respectively, the large deviation principle follows by employing the existence, uniqueness and tightness of the solutions. This talk is based on a paper joint with Maroulas and Pan.