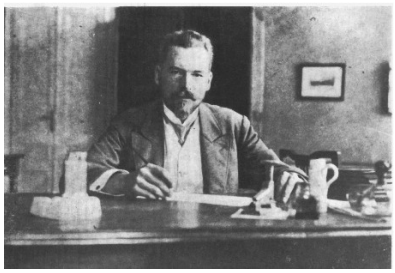

Contribution ID: **71** Type: **Contributed talk**

Backbone diffusion and first-passage dynamics in a comb structure with confining branches under stochastic resetting

Monday, 27 September 2021 10:20 (20 minutes)

We study the diffusive motion of a test particle in a two-dimensional comb structure consisting of a main backbone channel with continuously distributed side branches, in the presence of stochastic Markovian resetting to the initial position of the particle. We assume that the motion along the infinitely long branches is biased by a confining potential. The crossover to the steady state is quantified in terms of a large deviation function, which is derived for the first time for comb structures in present paper. We show that the relaxation region is demarcated by a nonlinear "light-cone" beyond which the system is evolving in time. We also investigate the first-passage times along the backbone and calculate the mean first-passage time and optimal resetting rate.

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