Singular behavior of Lyapunov exponents in a weak disorder limit

Date	May 23, 2018
Hour	3 pm
Room	GSSI Main Lecture Hall
Speaker	Francis Comets (Univ. Paris Diderot)

ABSTRACT

In this talk we will start with a product of two by two random matrices coming up in the analysis of certain one and two dimensional disordered systems. In this context the question of singularity at a specific value of a natural parameter arises naturally. In 1983 B. Derrida and H. J. Hilhorst provided a sharp prediction based on a two scale analysis of the invariant probability on the projective sphere. Our results will be for the two-dimensional linear stochastic differential equation obtained as weak disorder limit (diffusion-approximation) of the product of random matrices. There, the leading exponent can be expressed explicitly in terms of modifed Bessel functions. The limit captures the Derrida-Hilhorst singularity.

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