Seminar of Probability and Stochastic Process

Tuesday, 7th, December, from 10h15 to 11h30
MAA 110, EPFL, Ecublens

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Subdiffusive scaling limit of the random walk among random traps

Abstract:

To every x in Z^d, we associate a positive real number tau_x. We consider a random walk on Z^d, often called "Bouchaud's trap model", that is reversible for the measure with weights (tau_x). We assume that the (tau_x) are i.i.d. random variables. When these random variables are not integrable, the walk is "trapped" on sites where tau_x is very large. In this case, for d > 2, Barlow and Cerny (2010) proved that the random walk converges in law, after a subdiffusive scaling. Their proof is based on a coarse graining procedure, and require very delicate estimates on the transition probabilities. For d > 4, I will present an alternative proof of this result, based on the mixing properties of the environment viewed by the particle.

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