Probability Seminar

Organizer: Tai Melcher & George Kordzakhia

Wednesday, 3:10–4:00pm, 330 Evans

Mar 15 **Jean-Dominique Deuschel**, TU Berlin

Quenched invariance principle for random walks in random environment admitting a finite cycle representation

We consider a class of random walks in a random environment on Z^d admitting a finite cycle representation, that is the corresponding jump rates are labeled by finite oriented cycles with ergodic weights, e.g. [K], [M]. The reversible random conductances model with trivial two points cycles is a particular case, see [S] thus our model extends to the non reversible situation. Assuming uniform irreducibility, we prove a quenched invariant principle for the rescaled process. The annealed CLT result has been proved recently in the special case of two-fold walks by Komorovski and Olla in [K]. We adapt the quenched proof of Sidoravicius and Sznitman, [S], to the non reversible case using corrector, the sector condition and the heat kernels upper bounds for centered random walks by Mathieu, [M].

Joint work with Holger Koesters.

[K] Komorowski, T; Olla, S., A note on the central limit theorem for two-fold stochastic random walks in a random environment. Preprint (2005).

[M] Mathieu, P., Carne-Varopoulos bounds for centered random walks. Ann. of Prob. (2006).

[S] Sidoravicius, V. ; Sznitman, A., Quenched invariance principles for walks on clusters of percolation or among random conductances. Probab. Theory Related Fields, 129, 219-244.