Abstract: "The non-zero velocity regime of a random walk in random environment at low disorder"

We consider a random walk whose jump probabilities are i.i.d. perturbations of those of the simple symmetric random walk. This walk can exhibit a variety of behaviors, ranging from recurrent to transient regimes with zero or non-zero velocity. Under the condition that the average jump after one step (local drift) is not too small, it was proved by Sznitman, that the random walk has a non-zero velocity. Using a renormalization approach, we establish that under the same condition, the velocity is asymptotically equal to the local drift as the strength of the perturbation vanishes.

This talk is based on a joint work with Clement Laurent and Christophe Sabot.