

# Limit theorems for long range random walks on nilpotent groups

Takashi Kumagai  
(Waseda University)

We consider a natural class of long range random walks on torsion free nilpotent groups and discuss limit theorems for these walks. Given the original discrete group and a random walk driven by a certain type of symmetric probability measure, we construct a homogeneous nilpotent Lie group which carries an adapted dilation structure and a stable-like process which appears in a Donsker-type functional limit theorem as the limit of a rescaled version of the random walk. We also prove a local limit theorem of the random walk. This is a joint work with Z.-Q. Chen, L. Saloff-Coste, J. Wang and T. Zheng.