

Geometry, Groups and Dynamics/GEAR Seminar
(held at the Illinois hub of GEAR)

12:00 pm, Tuesday, November 3, 2015, 345 Altgeld Hall

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Ergodic Theory and Rigidity of Nilpotent Groups

Abstract: Random aspects of the coarse geometry of finitely generated groups both occur naturally and have applications to the deterministic case. First, we describe the asymptotic behavior of certain random metrics on nilpotent groups, which generalizes a theorem of Pansu and implies an asymptotic shape theorem for first passage percolation. Seen from another perspective, this is a subadditive ergodic theorem for nilpotent groups. Second, we describe a measurable cocycle analog of Pansu's Rademacher-type differentiation theorem for Carnot spaces, answering a question of Austin. From this we deduce Pansu's quasi-isometric rigidity theorem.

[Video](#)