Michael Cantrell* (mcantr2@uic.edu) and Alex Furman. Asymptotic Shapes of Ergodic Random Metrics on Nilpotent Groups.

In this talk we will present three seemingly different results about randomness in a finitely generated nilpotent group: an asymptotic shape theorem for First Passage Percolation; a generalization to random metrics of Pansu’s theorem that the unique asymptotic cone of a nilpotent group is a particularly nice nilpotent Lie group; a Subadditive Ergodic Theorem for nilpotent groups. The results are all related, and the proof involves sub-Riemannian geometry and Ergodic Theory. (Received July 23, 2015)