Mathematics, Statistics, and Computer Science **@ UIC**

Geometry, Topology and Dynamics Seminar

Random groups at density $d < 3/14$ *act on CAT(0) cube complexes.*

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Abstract: For random groups in the Gromov density model at $d < 3/14$, we construct walls in the Cayley complex X which give rise to a non-trivial action by isometries on a CAT(0) cube complex. This extends results of Ollivier-Wise and Mackay-Przytycki at densities $d < 1/5$ and $d < 5/24$, respectively. We are able to overcome one of the main combinatorial challenges remaining from the work of Mackay-Przytycki, and we give a construction that plausibly works at any density $d < 1/4$.

Monday, October 21 at 3:00 PM in 636 SEO