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

Geometry, Topology and Dynamics Seminar

Hyperbolic Volumes of Random Links

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Abstract: What does a random link look like? There have been a few different proposed models for sampling from the set of links – in this talk, I will describe a model based on random link diagrams in the plane. Such diagrams can be sampled uniformly on a computer due to the work of Gilles Schaeffer, so one can experiment with various invariants of links with the topology software SnapPy. I will present data showing what happens with some of the different invariants SnapPy can compute, and I will outline a proof that the hyperbolic volume of the complement of a random alternating link diagram is asymptotically a linear function of the number of crossings. This proof leverages a theorem of Marc Lackenby for alternating link diagrams. In contrast, for non-alternating links, I will show why the diagrams we get generically represent satellite (and hence non-hyperbolic) links.

Monday, March 6 at 3:00 PM in SEO 636