

Random orderings and unique ergodicity of automorphism groups

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Abstract

Is there a natural way to put a random total ordering on the vertices of a finite graph? Natural here means that all finite graphs get an isomorphism-invariant random ordering and induced subgraphs get the random ordering that is inherited from the larger graph. Thus, the uniformly random ordering is natural; are there any others? What if we restrict to certain kinds of graphs? What about finite hypergraphs or finite metric spaces? We discuss these questions and sketch how their answers give unique ergodicity of corresponding automorphism groups; for example, in the case of graphs, the group is the automorphism group of the infinite random graph. This is joint work with Omer Angel and Alexander Kechris.