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JD Nir* (jnir@huskers.unl.edu) and **Xavier Pérez Giménez**. *The Chromatic Number of Random Lifts of Regular Graphs*.

Graph coloring is one of several constraint satisfaction problems that are studied on random structures. The problem at the heart of this talk is to identify the chromatic number of a random d -regular graph. However, inspired by an open question of Linial, rather than choose our regular graph uniformly we take a random lift of a smaller regular graph. When the host graph is K_{d+1} , our method resolves the chromatic number exactly for roughly half of the choices of d and in the other cases give a window of size two. Furthermore, our proof contains several topics of independent interest, including a second moment that's easier to analyze than the first moment and a novel application of Kirchoff's Matrix Tree Theorem. (Received September 03, 2019)