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JD Nir* (nir.justin@gmail.com) and **Xavier Perez**. *The Chromatic Number of Random Lifts of Regular Graphs*.

Graph coloring is one of several constraint satisfaction problems studied on random structures. The problem at the heart of this talk is to bound the chromatic number of a random d -regular graph. Rather than use the uniform model, we take inspiration from a question of Linial and generate our regular graph by taking random lifts of a regular host graph. This method produces a family of noncontiguous models of random graphs. We provide an upper bound for the chromatic number of such lifts. In the case where the host graph is complete, we also provide a nearly matching lower bound. Our proof contains several techniques with broad applications in random structures, including Laplace summation, the saddle point method, and the small subgraph conditioning method. (Received August 17, 2020)