

Random monomial ideals

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This talk will overview several probabilistic models for random monomial ideals. The constructions are inspired by the study of random graphs and simplicial complexes, and motivated by the need to understand average behavior of ideals. We will describe some results on the probability distributions, expectations and thresholds for events involving monomial ideals with given Hilbert function, Krull dimension, first graded Betti numbers, and present several experimentally-backed conjectures about regularity, projective dimension, strong genericity, and Cohen-Macaulayness of random monomial ideals.