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Random subcomplexes and Betti numbers of random edge ideals

The coedge ideal of an Erdős–Rényi random graph is a model for random squarefree monomial ideals. Using Hochster's formula one can study and interpret properties of the resulting random monomial ideal in terms of the topology of the flag complex of the random graph. By applying methods from stochastic topology we prove sharp bounds on the regularity and projective dimension of random coedge ideals in a probability regime where the Krull dimension is bounded. This is joint work with Anton Dochtermann.