1165-13-280 **Anton Dochtermann*** (dochtermann@txstate.edu) and **Andrew Newman**. *Betti numbers of random edge ideals.*

We study asymptotic homological properties of random quadratic monomial ideals in a polynomial ring $R = k[x_1, \ldots, x_n]$, utilizing methods from the Erdös-Rényi model of random graphs. Here we consider a graph on n vertices and exclude an edge (corresponding to a quadratic generator of the ideal I) with probability p, and consider algebraic properties as $n \to \infty$. Our main results involve fixing the edge parameter $p = p(n)$ so that asymptotically almost surely the Krull dimension of R/I is fixed. Under these conditions we establish various properties regarding the Betti table of R/I, including distribution of Betti numbers and sharp bounds on regularity and projective dimension. These results extend work of Erman-Yang, who studied such ideals in the context of conjectured phenomena in the nonvanishing of asymptotic syzygies. Our results rely on methods from random graph theory, collapsibility properties of random clique complexes, and Garland's method regarding spectral gaps of graphs. In particular some of our results rely on the underlying field. (Received January 19, 2021)