1147-05-391 **Anton Dochtermann*** (dochtermann@txstate.edu). *Exposed circuits, linear quotients, and chordal clutters.*

Chordal graphs are widely studied combinatorial objects, with various characterizations and applications. They also appear in commutative algebra in the context of Froberg's theorem, which says that a graph G is chordal if and only if $I_{\bar{G}}$, the edge ideal of its complement, has linear resolutions. Recently Culbertson, Guralnik, and Stiller give a new characterization of chordal graphs in terms of what they call 'edge-erasures'. We show that these moves are in fact equivalent to a linear quotient ordering on $I_{\bar{G}}$, leading to an algebraic proof of their result. We consider higher-dimensional analogues and show that linear quotients for more general circuit ideals of d-clutters can be characterized in terms of removing exposed circuits in the complement clutter. Here a circuit is exposed if it is uniquely contained in a maximal clique, reminiscent of the free faces of simple homotopy theory. Restricting to properly exposed circuits can be characterized by a homological condition. This leads to notions of higher-dimensional spanning trees and 'chordal clutters' which borrow from commutative algebra. We investigate other connections, including an application to Simon's conjecture, which posits that the k-skeleta of a simplex are extendably shellable. (Received January 22, 2019)