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Monomial Bases for NBC Complexes

Let G be a graph whose edge set E has been totally ordered. Consider the corresponding NBC complex Δ consisting of all subsets of E which do not contain a broken circuit with respect to the ordering. Let R be the Stanley–Reisner ring of Δ. Jason Brown gave an explicit description of a homogeneous system of parameters for R in terms of fundamental edge-cuts in G. So R modulo this h.s.o.p. is a finite dimensional vector space. We conjecture an explicit monomial basis for this vector space in terms of the circuts of G and prove that the conjecture is true for several families of graphs.