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A proof of a conjecture about Schubert determinantal ideals

Knutson and Miller (2005) showed that the Fulton generators form Gröbner bases of Schubert determinantal ideals under any anti-diagonal term order. Gröbner bases of diagonal term orders have proved much more elusive. Recently, Hamaker, Pechenik, and Weigandt conjectured that a generating set they named the CDG generators form a diagonal Gröbner basis if and only if 8 permutation patterns are avoided. In this talk, we will use the relationship between Gorenstein liaison and geometric vertex decomposition, explore the speaker's previous work with Rajchgot, to gain intuition for why these 8 patterns must be avoided and to sketch a proof of the conjecture.