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Bumpless pipe dreams encode Gröbner geometry of Schubert polynomials

Knutson and Miller established a connection between the anti-diagonal Gröbner degenerations of matrix Schubert varieties and the pre-existing combinatorics of pipe dreams. They used this correspondence to give a geometrically-natural explanation for the appearance of the combinatorially-defined Schubert polynomials as representatives of Schubert classes. In this talk, we will describe a similar connection between diagonal degenerations of matrix Schubert varieties and bumpless pipe dreams, newer combinatorial objects introduced by Lam, Lee, and Shimozono. This connection was conjectured by Hamaker, Pechenik, and Weigandt. This talk is based on joint work with Anna Weigandt.