Analogue of Fomin-Stanley algebra on bumpless pipedreams

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Abstract

Schubert polynomials are distinguished representatives of Schubert cells in the cohomology of the flag variety. Pipedreams (PD) and bumpless pipedreams (BPD) are two combinatorial models of Schubert polynomials. There are many classical perspectives to view PDs: Fomin and Stanley represented each PD as an element in the NilCoexter algebra; Lenart and Sottile converted each PD into a labeled chain in the Bruhat order. In this talk, we unravel the BPD analogues of both viewpoints. One application of our results is a simple bijection between PDs and BPDs via Lenart's growth diagram.