

P_π -tableaux and the Betti numbers of Hessenberg varieties

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Let π be Dyck path of length $2n$ and P_π the corresponding partial order on the set $[n]$. Gasharov used P_π -tableaux to give a positive formula for the Schur expansion of the chromatic symmetric function $X_T(\mathbf{x})$. Shareshian and Wachs defined an inversion statistic on the set of P_π -tableaux to generalize Gasharov's results to the setting of chromatic quasisymmetric functions. In this talk, we'll introduce a second inversion statistic on these tableaux motivated by the connections between chromatic symmetric functions and Hessenberg varieties. I will discuss a result that relates the two statistics and present several open problems.