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Title: Poisson structures on flag varieties and quantum Schubert cells

Abstract:
We will go over several combinatorial and ring theoretic aspects of the geometry of the standard Poisson structures on flag varieties. Firstly we will give a simple Poisson geometric proof of the recent cyclicity result of Knutson, Lam and Speyer for the Lusztig stratification of Grassmannians. Next we will discuss the De Concini-Kac-Procesi algebras, which are a family of subalgebras $U^w_q(g)$ of a quantized universal enveloping algebra $U_q(g)$ associated to the elements of the corresponding Weyl group $W$. We will describe explicitly all torus invariant prime ideals of the algebras $U^w_q(g)$, construct efficient generating sets, and describe the poset of those ideals. We will then apply these results to classify the torus invariant prime ideals of quantum partial flag varieties. Finally we will go over some implications to the Andruskiewitsch-Dumas conjecture on the automorphism groups of $U_q^+(g)$. 