NATHAN LESNEVICH, Washington University in St Louis
Splines on Cayley Graphs of the Symmetric Group

A spline is an assignment of polynomials to the vertices of a polynomial-edge-labeled graph, where the difference of two vertex polynomials along an edge must be divisible by the edge label. The ring of splines is a combinatorial generalization of the GKM construction for equivariant cohomoloy rings of flag, Schubert, Hessenberg, and permutohedral varieties. We consider spline rings where the underlying graph is the Cayley graph of a symmetric group generated by an arbitrary collection of transpositions. In this talk, we will give an example of when this ring is not a free module over the polynomial ring, and give a connectivity condition that precisely describes when particular graded pieces are generated by equivariant Schubert classes.