
LEONARDO MIHALCEA, Virginia Tech

Positivity and log concavity conjectures in Cotangent Schubert Calculus

In Cotangent Schubert Calculus, the usual Schubert classes are replaced by characteristic classes of Schubert cells, such as the Chern-Schwartz-MacPherson classes in cohomology and motivic Chern classes in K theory. These are pull backs of certain Lagrangian cycles from the cotangent bundle of a flag manifold, and they may be calculated utilizing Demazure-Lusztig operators from the Hecke algebra. In this talk I will discuss several conjectures about positivity and log-concavity of cotangent Schubert classes, involving the transition matrix to the ordinary Schubert classes, and also about the structure constants from the multiplication of the cotangent Schubert classes. This reports on published and ongoing work with P. Aluffi, J. Schurmann, and C. Su.