SCHUBERT CALCULUS FOR QUANTUM IRREDUCIBLE FLAG MANIFOLDS

ANDREY KURTOV

Abstract:
Schubert calculus is a remarkable area of mathematics which studies the de Rham cohomology of generalised flag manifolds from a combinatorial point of view. From its computational origins in enumerative geometry, its concrete formulation was deemed important enough for Hilbert to name it as his 15th problem. The cohomologies of the classical flag manifolds have a remarkable ring strucutre which is closely related to representation theory. For example, in the case of Grassmaniannas the multiplication table is given by Littelewood–Richardson coefficients. In this talk we will discuss Schubert calculus for the irreducible quantum flag manifolds, in particular the quantum Grassmaninanns, from the point of view of representation theory and will keep track its connection with invariant theory and (quanutm) Howe duality.