

Workshop on Interactions Between  
Algebraic Combinatorics and Algebraic Geometry  
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## Quantum $K$ -theory of Grassmannians

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### Abstract

The Gromov-Witten invariants of a homogeneous space  $X$  give the number of rational curves of fixed degree that meet three general Schubert varieties, at least when this number is finite. When there are infinitely many such curves, then the moduli space of (stable) parametrizations of the curves is a projective variety. The  $K$ -theoretic Gromov-Witten invariants are the Euler characteristic of such varieties, and were used by Y.-P. Lee to define a quantum  $K$ -theory ring of  $X$ . I will present structure theorems for this ring when  $X$  is a Grassmann variety of type  $A$ , and a formula for the  $K$ -theoretic Gromov-Witten invariants that generalizes earlier work with Kresch and Tamvakis.

*This is a joint work with L. Mihalcea.*