

# Schubert calculus and quantum integrable systems

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In the talk we will describe a new feature of the classical, equivariant and quantum Schubert calculus which holds for all types of the classical Lie groups. As the main example we will use the type A Grassmanians. The usual definition of the Schubert cycles involves a choice of a parameter, namely a choice of a full flag. Studying the dependence of the construction of the Schubert cycles on these parameters in the equivariant cohomology leads to an interesting solution to the quantum Yang Baxter equation and hence connects the Schubert calculus to the theory of quantum integrable systems. In this talk we will describe the corresponding quantum integrable systems, who turn out to be two 5 vertex lattice models, in geometric representation theory terms and outline some unexpected consequences of this connection for Schubert calculus. We will also explain how the above is connected to the recent developments of modern theory of quantum groups developed by Nekrasov Shatashvili Okounkov and Maulik.