Quantum algebras and shuffle algebras

In this talk, we will present an explicit isomorphism between the shuffle algebra of Feigin and Odesskii and the quantum toroidal algebra of gl_n. We will present the various constructions that are involved in the proof of the isomorphism, and show how they lead to a factorization formula for the universal R-matrix of the quantum toroidal algebra. If time permits, we will discuss an application to the K-theory of affine Laumon spaces.