

## The non-commutative KdV equation and enumerative geometry

*Monday, September 2, 2019 3:30 PM (30 minutes)*

In the past years, in a joint project with A. Buryak, we have developed a general framework to construct classical and quantum field systems (in one space and one time dimensions) from intersection theory of the moduli space of stable curves. Recently a particularly interesting example came under our attention, which actually produces an integrable system of Hamiltonian PDEs in two space and one time dimensions. Computations of quadratic double ramification integrals, an entirely natural problem in algebraic geometry, turn out to produce an interesting generalization of the KdV hierarchy to 2 non-commutative space dimensions (KdV on a noncommutative Moyal torus).

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