VIRTUAL COULOMB BRANCH AND QUANTUM K-THEORY

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Time: Fri, Mar. 31, 13:30-14:30

Venue: Room 102, SCMS

Abstract:

In this talk, I will discuss a virtual variant of the quantized Coulomb branch constructed by Braverman-Finkelberg-Nakajima, where the convolution product is modified by a virtual intersection. The resulting virtual Coulomb branch acts on the moduli space of quasimaps into the holomorphic symplectic quotient $T^*N///G$. When G is abelian, over the torus fixed points, this representation is a Verma module. The vertex function, a K-theoretic enumerative invariant introduced by A. Okounkov, can be expressed as a Whittaker function of the algebra. The construction also provides a description of the quantum q-difference module. As an application, this gives a proof of the invariance of the quantum q-difference module under the variation of GIT.