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Multiplicative vertex algebras and wall-crossing in equivariant K-theory

I will explain how a recent "universal wall-crossing" framework of Joyce works in equivariant K-theory, which I view as a multiplicative refinement of equivariant cohomology. Enumerative invariants, possibly of strictly semistable objects living on the walls, are controlled by a certain (multiplicative version of) vertex algebra structure on the K-homology groups of the ambient stack. In very special settings like refined Vafa-Witten theory, one can obtain some explicit formulas. For moduli stacks of quiver representations, this geometric vertex algebra should be dual in some sense to the quantum loop algebras that act on the K-theory of stable loci.