

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

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Thursday, February 8, 2:50-3:50 pm, Lake Hall 509

**The Dunkl Weight Function for Representations of
Rational Cherednik Algebras**

Abstract

Let W be a finite Coxeter group and let V be an irreducible representation of W . I will discuss the “Dunkl weight function”, an analytic family of functions/tempered distributions on the real reflection representation of W taking values in Hermitian forms on V . In particular, I will show how these functions arise naturally in the setting of representations of rational Cherednik algebras, where they give rise to integral formulas for the invariant Hermitian forms on the “Verma modules” in the associated category \mathcal{O} . I will explain how the Dunkl weight function provides a bridge between the study of invariant Hermitian forms on representations of rational Cherednik algebras and Hecke algebras, and I will state some related conjectures having to do with Jantzen filtrations and signatures.