



## Probability Seminar

**Title:** Explicit formulas for the first hitting time of the boundary of the Weyl chamber by radial Dunkl processes

**Speaker:** Nizar Demni (Rennes)

**Date:** Wed 26th February 2020 at 2:00PM

**Location:** Seminar Room SCN 1.25

**Abstract:** I'll briefly introduce radial Dunkl processes and give necessary and sufficient conditions for the finiteness of the first hitting time of the boundary of the Weyl chamber. Then, I'll give explicit expressions for the tail distribution of this random variable for the infinite families of reduced root systems. For types A, C, D, the computations lead to a generalization of the Selberg integral which we express through multivariate hypergeometric functions. To this end, our strategy relies on proving that this integral is a symmetric complex-analytic eigenfunction of an Ornstein-Uhlenbeck type operator with prescribed initial value. For dihedral root systems, we follow another route and appeal to a striking identity satisfied by Gegenbauer polynomials proved by the author and L. Deleaval.

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