

# Lie Groups and Representation Theory Seminar at the University of Tokyo

リー群論・表現論セミナー

- DATE February 4 (Mon), 2013, 17:30–19:00
- PLACE Room 126, Graduate School of Mathematical Sciences
- SPEAKER **Nizar Demni** (Université de Rennes 1)
- TITLE Dunkl processes associated with dihedral systems, I
- ABSTRACT I'll first give a brief and needed account on root systems and finite reflection groups. Then, I'll introduce Dunkl operators and give some properties. Once I'll do, I'll introduce Dunkl processes and their continuous components, so-called radial Dunkl processes. The latter generalize eigenvalues processes of some matrix-valued processes and reduces to reflected Brownian motion in Weyl chambers. Besides, Brownian motion in Weyl chambers corresponds to all multiplicity values equal one are constructed from a Brownian motion killed when it first hits the boundary of the Weyl chamber using the unique positive harmonic function (up to a constant) on the Weyl chamber. In the analytic side, determinantal formulas appear and are related to harmonic analysis on the Gelfand pair  $(\mathrm{Gl}(n, \mathbb{C}), \mathrm{U}(n))$ . This is in agreement on the one side with the so-called reflection principle in stochastic processes theory and matches on the other side the so-called shift principle introduced by E. Opdam. Finally, I'll discuss the spectacular result of Biane–Bougerol–O'connell yielding to a Duistermaat–Heckman distribution for non crystallographic systems.