

***DISCRETE  $N$ -PARTICLE ENSEMBLES AT HIGH  
TEMPERATURE THROUGH SYMMETRIC FUNCTIONS***

**Speaker: Cesar Cuenca**  
**The Ohio State University**

**Time: Fri, Jun 12th, 15:00 - 16:00**

**Venue: Room 106, SCMS**

**Abstract:**

Following a brief discussion of the continuous Gaussian beta ensemble and the classical Law of Large Numbers (LLN) for its empirical measures in the regime of fixed temperature, we switch to the setting of discrete-space particle systems. By using Fourier transforms based on Jack symmetric polynomials, we study discrete  $N$ -particle ensembles in the regime where the inverse temperature parameter tends to zero, simultaneously as the number of particles in the system tends to infinity. We prove the LLN and characterize the limiting measure in terms of a moment problem. For fixed-time distributions of the discrete beta-Dyson Brownian motion, we calculate the densities of the limiting measures and express them in terms of the zeroes of certain entire functions or the eigenvalues of certain Jacobi operators. This talk is based on joint works with Florent Benaych-Georges, Vadim Gorin and Maciej Dolega.