
NATHAN PAGLIAROLI, Western University
Phase Transition in Random Noncommutative Geometries

Finite spectral triples where the algebra is the space of N by N Hermitian matrices are an example of a matrix geometry. Such spaces can be equipped with a probability measure on the moduli space of its Dirac operator creating ensembles of Dirac operators. Numerical evidence has shown that these ensembles exhibit evidence of phase transition as well as the spectrum being related to that of the fuzzy 2-sphere. In this talk we will discuss a proof of the existence of phase transitions in certain Dirac ensembles as well as how to compute their spectral density function. This work is based on the joint paper of mine with Masoud Khakhali arXiv:2006.02891.