

# **THE LOG-CONCAVE CONJECTURES OF GRAPHS AND MATROIDS**

**Botong Wang**

(University of Wisconsin–Madison)

The chromatic polynomial is an important invariant in graph theory introduced by Birkhoff. A generalization of chromatic polynomial is the characteristic polynomial in matroid theory. It was conjectured by Rota, Heron and Welsh in the 70's that the coefficients of the characteristic polynomials are log-concave. I will talk about a beautiful proof of this conjecture by Karim Adiprisito, June Huh and Eric Katz. I will also discuss a log-concavity result about the number of independent sets, which is joint work with June Huh and Benjamin Schroter. The key idea to proof the log-concavity properties is to use the Hodge-Riemann relation in algebraic geometry.

Talk will take place in Pearce 226 on

**FRIDAY, 09/14/2018, 11:15AM–12:15PM**

*Hope to see you there!*