

Queen's Algebraic Geometry — Seminar —

RANDOM GRAPH MODELS:
AN EXAMPLE IN APPLIED ALGEBRAIC GEOMETRY

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Abstract

Algebraic statistics applies algebraic geometry to the study of statistical models. Many interesting families of models correspond to classical families of algebraic varieties. In particular, toric ideals play a special role in the field. One family of “toric models” is given by the p_1 random graph model, which models interactions in a social network. The Markov basis for this model can be understood via the special fiber ring of bipartite graphs.

I will introduce the basic definitions necessary for understanding the algebraic geometry–statistics dictionary for this family of examples, and explain the correspondence between the Markov basis and the special fiber ring. This talk is based on joint work with Stephen Fienberg and Alessandro Rinaldo (Carnegie Mellon University).

Monday 20 September 2010
16:30 – 17:30
319 Jeffery Hall