

STANFORD PROBABILITY SEMINAR

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Monday, 10 October 2005

4:15pm (Refreshments at 4pm in the 1st Floor Lounge)

Sequoia Hall, Room 200

Generating random graphs with given degrees

Abstract. Random graphs with a given degree sequence are a useful model capturing several features absent in the classical model, such as dependent edges and non-binomial degrees. We use a characterization due to Erdos and Gallai to develop a sequential algorithm for generating a random labeled graph with a given degree sequence. The algorithm is easy to implement and use with sequential importance sampling. Applications such as studying a real-world food web and estimating the number of graphs with a given degree sequence are discussed. Joint work with Persi Diaconis.