



HOW TO MODEL HEAVY TAILS IN A PREFERENTIAL ATTACHMENT NETWORK?

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Lecture

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Abstract: Social network analyses generate large sets of complicated data with power-law degree distribution. In terms of modeling the underlying generative model for network growth must keep simple so as to guarantee any useful mathematical results can be derived. Preferential attachment (PA) models with a small number of parameters have been used to strike a balance between mathematics and the statistical fitting. Although the PA models struggle to match the real data, it gives us a content to test and analyze estimation methods. For example, one important issue for network modeling is how to estimate the tail exponent of the power-law degree distribution. Coupling the Hill estimator with a minimum distance threshold selection technique is a common approach but lacks theoretical justifications. In this talk, we discuss some attempts to justify and understand different tail estimation methods in the context of PA models.