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Alexander Engstrom* (alexander.engstrom@aalto.fi), Aalto University, Department of Mathematics, P.O. Box 11100, 00076 Aalto, Finland. *Algebraic Graph Limits*.

Random graphs are important both in theory and applications. In the most basic model edges are added independently with the same probability. That model is easy to analyse and feature many interesting phenomena, but most random graphs in nature doesn't look like that. Applied scientists have started the field of 'Complex Networks' that features random graph models that behave more like in nature, but are harder to analyse. One huge class of random graph models that captures many of these exotic applied models is called graph limits, and it's been developed by Lovasz and coauthors. The only drawback with graph limits in practice is that the infinite dimensional space of parameters provide ample freedom to overfit parameters and make bad model choices in practice. In this talk I will discuss how to restrict the graph limits to an algebraic setting where the number of parameters become reasonable for applied statistics and identifiability results can be proved using real algebraic geometry. (Received August 17, 2014)