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**Zoltan Toroczkai\*** ([toro@nd.edu](mailto:toro@nd.edu)), University of Notre Dame, Department of Physics, 225 NSH, Notre Dame, IN 46556. *Constrained Graph Construction Problems for Network Modeling*.

Here I will discuss some of the fundamental questions related to graph ensemble based modeling of empirical networks. In particular I will focus on degree based and joint-degree based graph existence, construction, sampling and counting problems and to a lesser extent, on soft-constraints based modeling using exponential random graph ensembles. (Received August 11, 2015)