

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Model framework for describing the dynamics of evolving networks JAN TOBOCHNIK, Kalamazoo College, KATHERINE STRANDBURG, DePaul University College of Law, GABOR CSARDI, Department of Biophysics, KFKI Research Institute, PETER ERDI, Kalamazoo College — We present a model framework for describing the dynamics of evolving networks. In this framework the addition of edges is stochastically governed by some important intrinsic and structural properties of network vertices through an attractiveness function. We discuss the solution of the inverse problem: determining the attractiveness function from the network evolution data. We also present a number of example applications: the description of the US patent citation network using vertex degree, patent age and patent category variables, and we show how the time-dependent version of the method can be used to find and describe important changes in the internal dynamics. We also compare our results to scientific citation networks.

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Date submitted: 15 Nov 2006

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