

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Degree distribution in some non-social collaboration networks<sup>1</sup>**

PEI-PEI ZHANG, Jiangsu University, YUE HE, Wuxi first middle school, BEI-BEI SU, HUI CHANG, YUE-PING ZHOU, DA-REN HE, Yangzhou University — We suggest a notice on the systems, which are not social ones but still can be described by bipartite graph models as well as collaboration networks. As examples, we present real data statistical results about public transportation network in Yangzhou city in 2003, public transportation network in Beijing city in 2003 and the touristy traveling line system in China. We show that, by certain definitions, each transportation or traveling line is described by a complete graph (an act) in the networks. The first system shows a good power-law degree distribution, while the second one shows a nice exponential degree distribution. The third one shows a degree distribution between the two cases: the distribution shows an exponential-like curve in a double-logarithmic plane but with a good linear part (a scaling-free region) in the middle. These results are in very good consistent with their bridge coefficient (how many collaboration acts a node takes part in) distribution. A simplified model that will be presented in another abstract may explain the reason

<sup>1</sup>supported by Chinese National Natural Science Foundation, No. 70371071

Da-Ren He  
Yangzhou University

Date submitted: 15 Nov 2004

Electronic form version 1.4