University of Konstanz
Algorithmics Group
V. Amati / J. Lerner / B. Nick

Network Modeling
Winter Term 2011/2012

Assignments $\mathcal{N}^{\underline{o}}$ 4 - part i

released: 07.12.2011 **due:** 14.12.2011, 14:15h
(solutions can be handed over at the beginning of the lecture)

Task 1: Holding Time — 3 points

In the SAOM, the waiting time until the next opportunity for a change is modeled with exponential distributions. What if we used normal distributions instead?

Task 2: Definition of Network Statistics — 2 points

Some endogenous network effects to be used within the SAOM framework have been formalized in the lecture. Another effect might be *preferential attachment*: Define a corresponding statistic which might be used to model that 'the rich get richer' in terms of incoming edges.

Task 3: Transition Probabilities — 5 points

In the lecture, we gave an example on the calculation of transition probabilities based on the objective function specification. Repeat this calculation for the same network configuration regarding actor 4.