Assignments $\mathcal{N}^{\underline{o}}$ 5 - PART II

released: 18.01.2012   **due:** 24.01.2012, 10AM

Task 1: Selection and Influence   4 points

Discuss the relevance of the network statistic $s_i(x, z) = z_i \sum_j x_{ij}$ to model selection and/or influence effects within the extended SAOM regarding the co-evolution of network x and behavior z.

Task 2: Selection and Influence   3 points

Arguably, especially those people are influential on each other, which mutually agree about "being friends". Provide a network statistic to test this hypothesis within the extended SAOM.

Task 3: Selection and Influence   3 points

What kind of influence effects are captured by $s_i^{(a),(b)}(x, z) =$

(a) $z_i \cdot \mathbb{I}\{\sum_j x_{ji} = 0\}$

(b) $z_i \cdot \sum_{j,h,k} x_{ij}(1 - x_{ji})(1 - x_{hi})(1 - x_{ki})\mathbb{I}\{x_{jh}x_{hj}x_{hk}x_{kh}x_{kj}x_{jk} = 1\}$

where $\mathbb{I}$ denotes the indicator function as already used in the lecture.