MO412 – Network Science   University of Campinas

Homework 04

Assigned on 2020-10-17   **Due on 2020-10-23**

1. This homework comes with an attached file `net.txt`, containing the edges of a directed network. Each line of the file contains two integers, x and y, representing an edge $x \to y$.

   (a) Plot the outgoing degree distribution of this network in a log-log scale. Does it look like a pure power-law?

   (b) The chapter on the scale-free property talks about low degree saturation and high degree cutoffs. Do you think any of these effects comes into play here? If yes, which of the two is more pronounced?

   (c) Plot the incoming degree distribution.

   (d) Can low degree saturation or high degree cutoff be perceived in the incoming degree distribution?