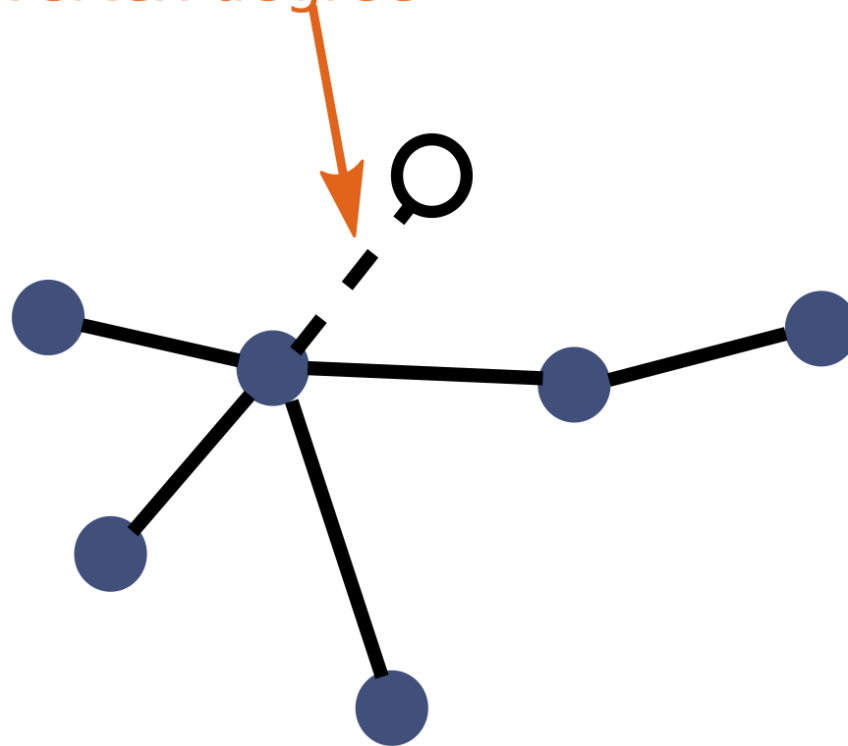# Barabási-Albert model and degree correlation

Python tutorial
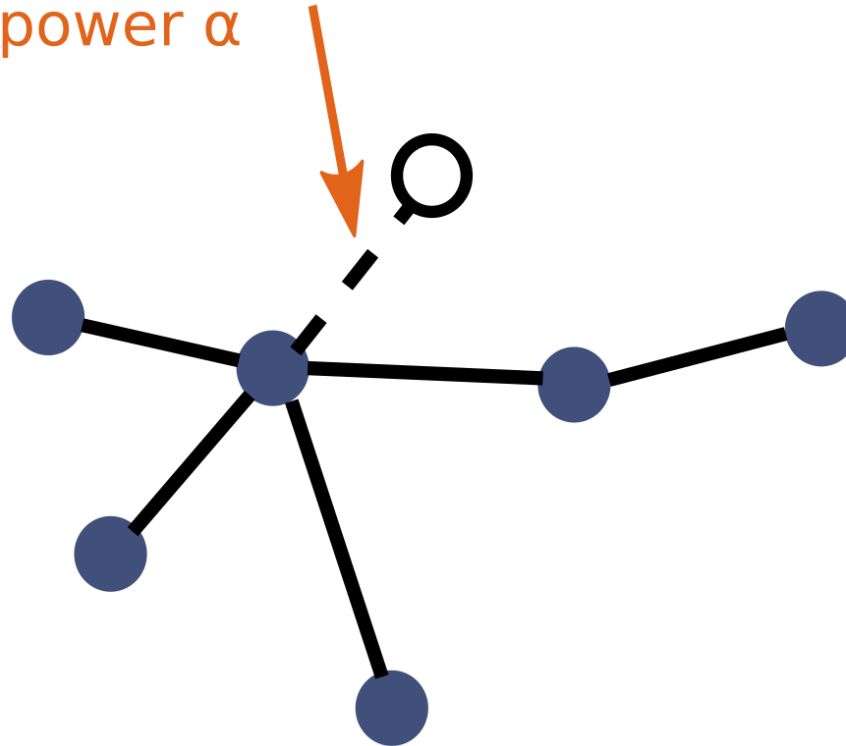
Suzana Santos
FGV-EMAp

August 16th 2022

Barabási-Albert model

The probability to connect a new vertex to other existing one is proportional to the vertex degree

Non-linear preferential attachment

The probability to connect the new vertice to an existing one is proportional to the degree power α

Degree correlation

Probability that an edge is connected to a vertice with degree i and a vertice with degree j

$$q_k = \frac{k p_k}{\langle k \rangle}.$$

$$\sum_j e_{ij} = q_i.$$

Neutral networks

$$e_{ij} = q_i q_j.$$