

Barabasi Albert Model

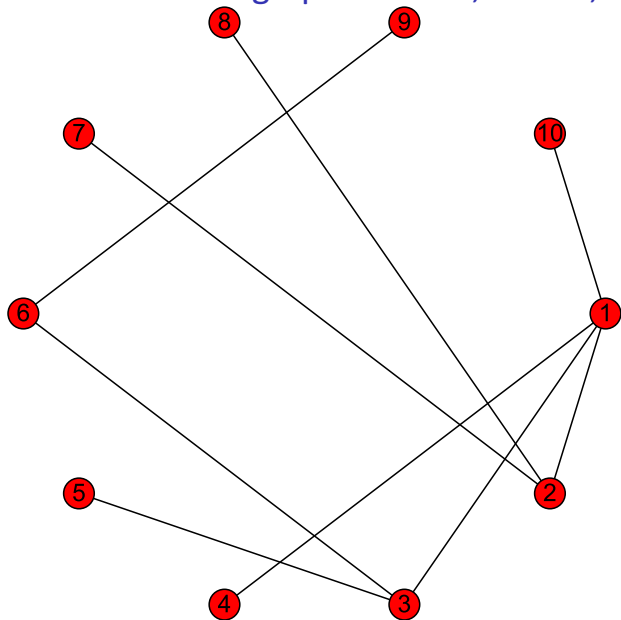
Nikolay Kuzjurin Stas Fomin

April 3, 2011

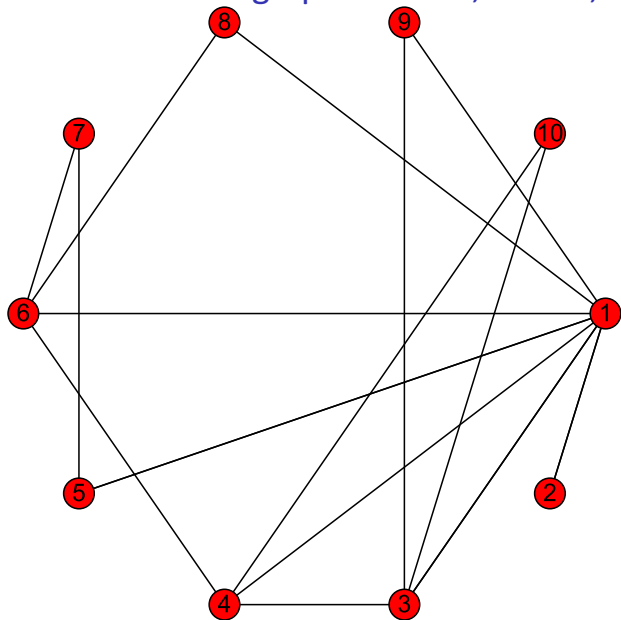
Barabasi Albert model (1999)

- starting with m_0 of vertices
- at every step:
 - ▶ add a vertex v_{new} with m edges
 - ▶ $P(v_{new} \text{ connected } v_i)$ depend on $degree(v_i)$
- After t steps we have $t + m_0$ vertices and mt edges.

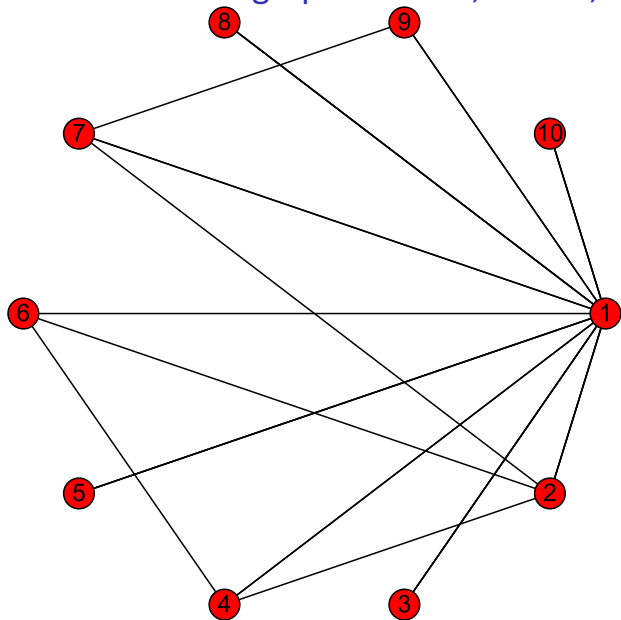
Barabasi-Albert graphs $n = 10, m = 1, \alpha = 1.1$



Barabasi-Albert graphs $n = 10, m = 2, \alpha = 1.1$

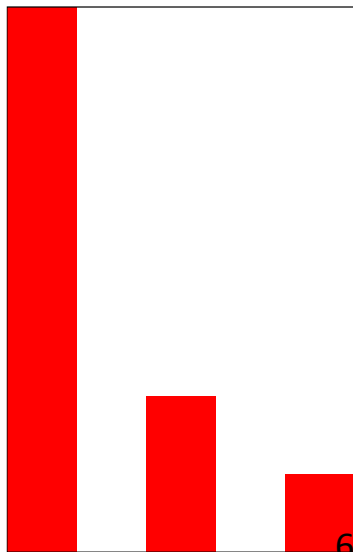
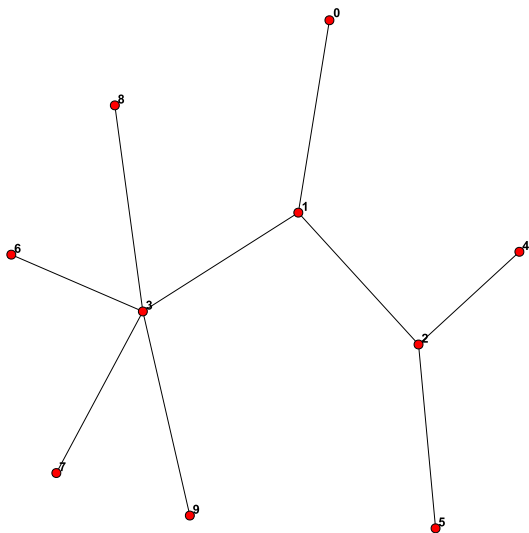


Barabasi-Albert graphs $n = 10, m = 3, \alpha = 1.1$

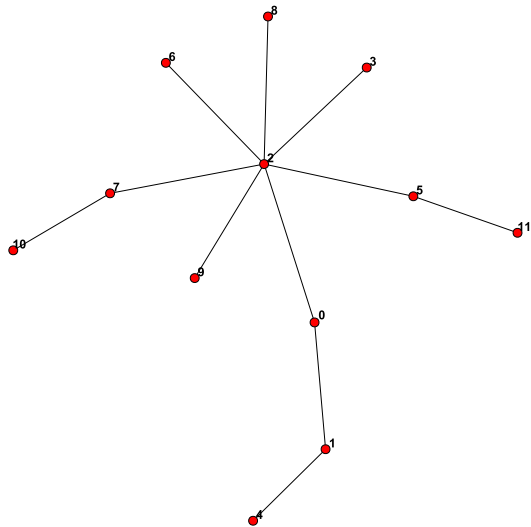


Barabasi-Albert graphs $n = 10, m = 1, \alpha = 1.1$

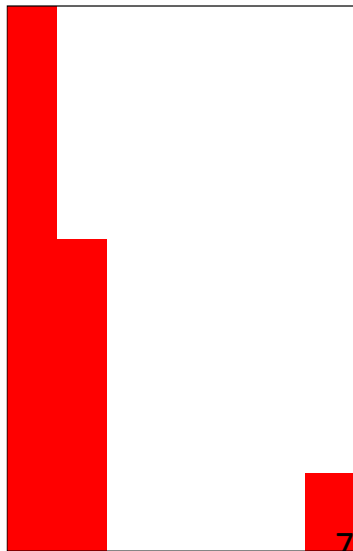
Degrees distributions



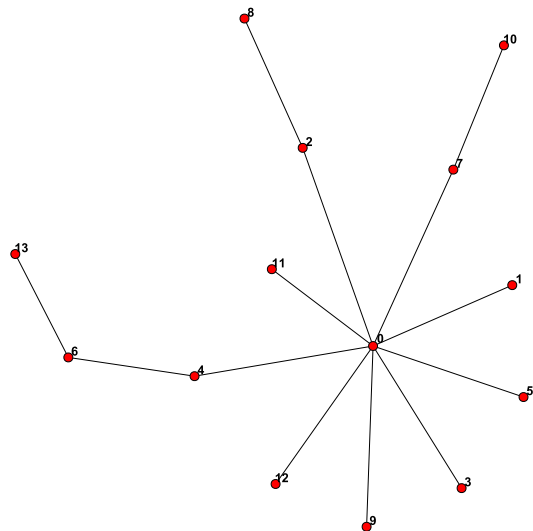
Barabasi-Albert graphs $n = 12, m = 1, \alpha = 1.1$



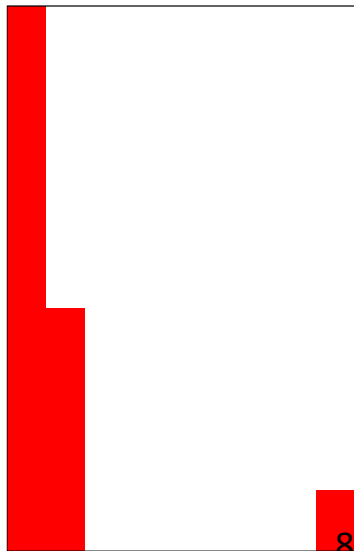
Degrees distributions



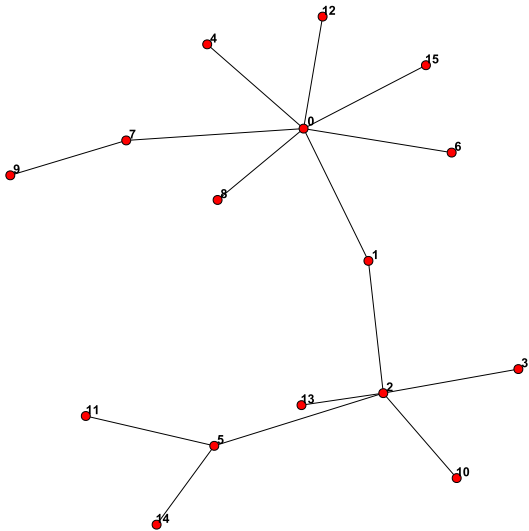
Barabasi-Albert graphs $n = 14, m = 1, \alpha = 1.1$



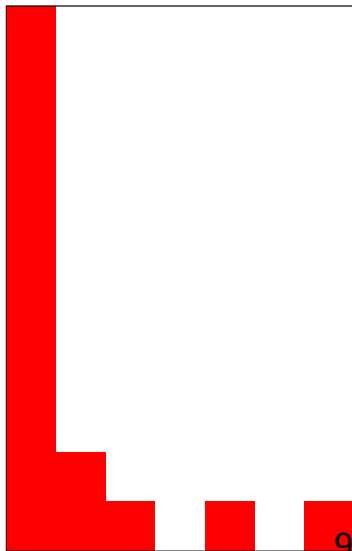
Degrees distributions



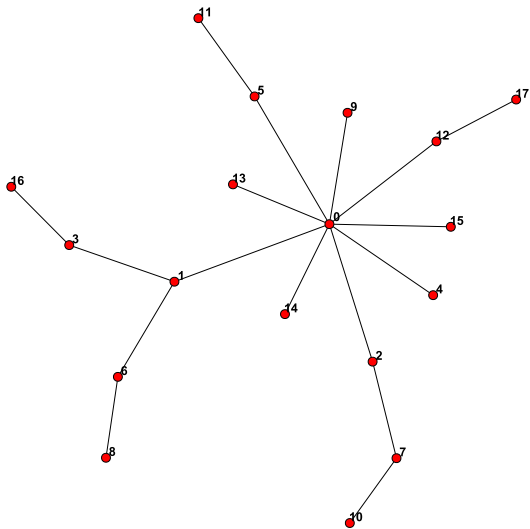
Barabasi-Albert graphs $n = 16, m = 1, \alpha = 1.1$



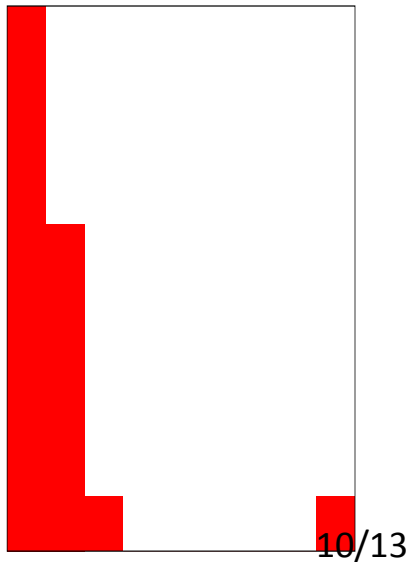
Degrees distributions



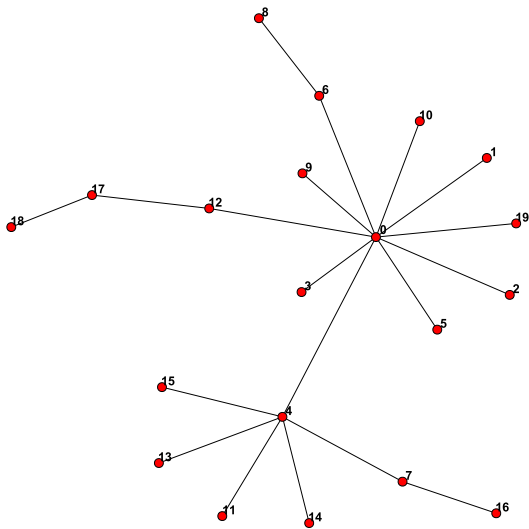
Barabasi-Albert graphs $n = 18, m = 1, \alpha = 1.1$



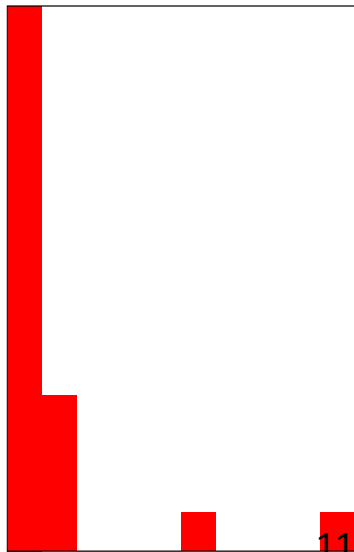
Degrees distributions



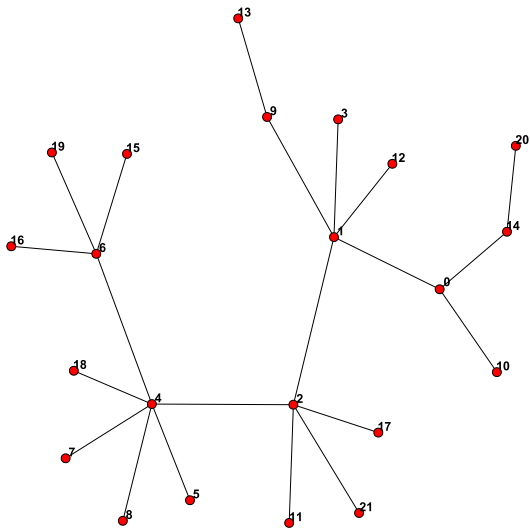
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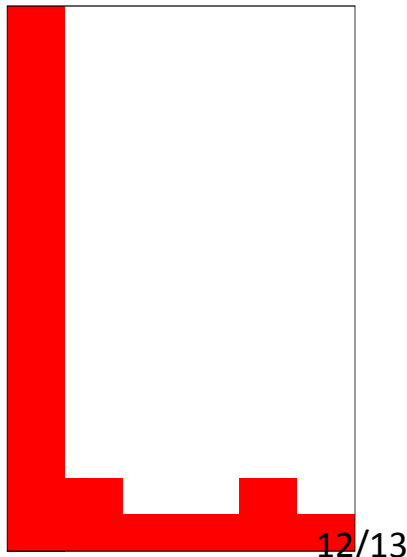
Degrees distributions



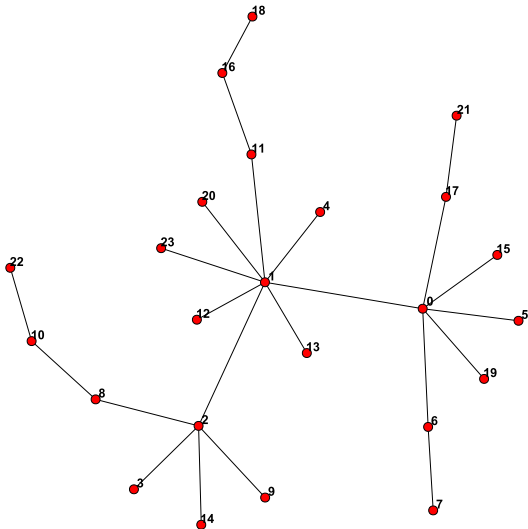
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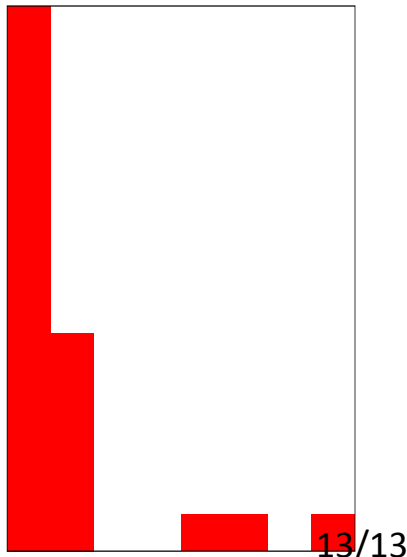
Degrees distributions



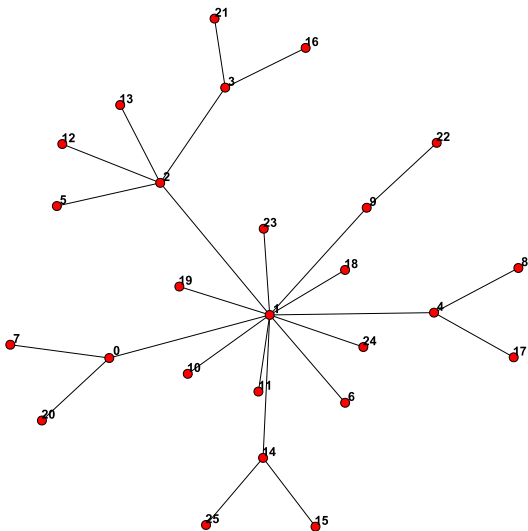
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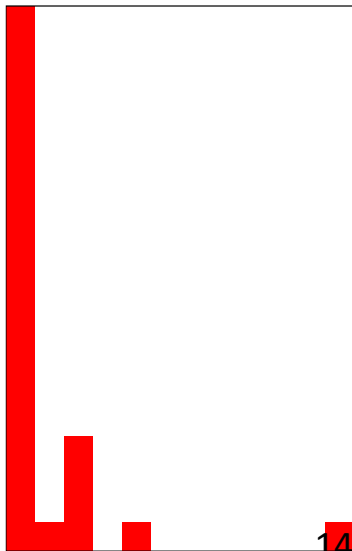
Degrees distributions



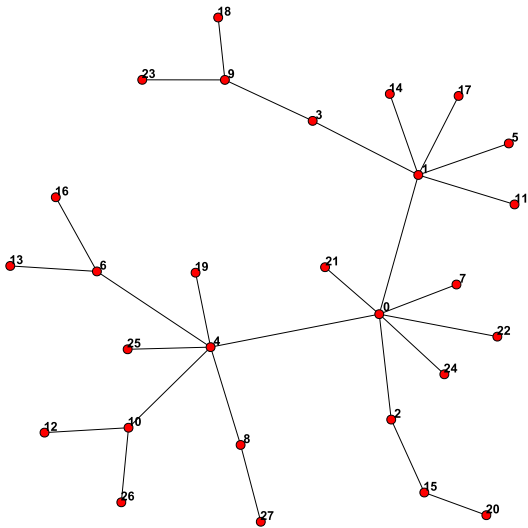
Barabasi-Albert graphs $n = 26, m = 1, \alpha = 1.1$



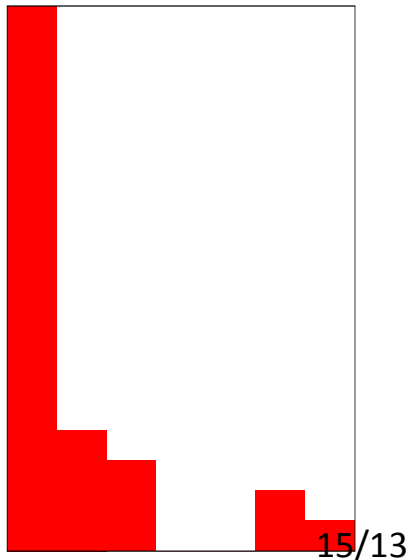
Degrees distributions



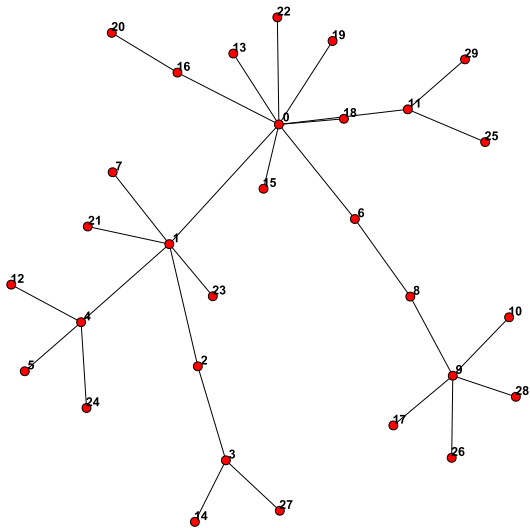
Barabasi-Albert graphs $n = 28, m = 1, \alpha = 1.1$



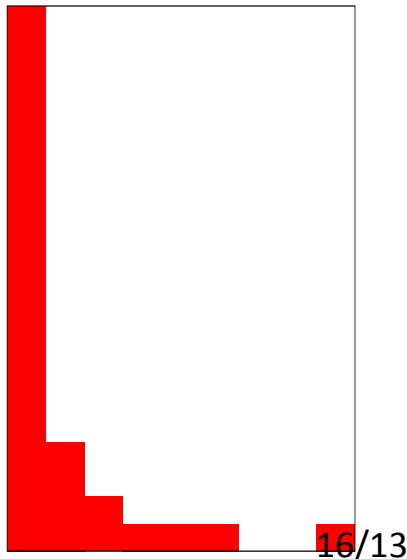
Degrees distributions



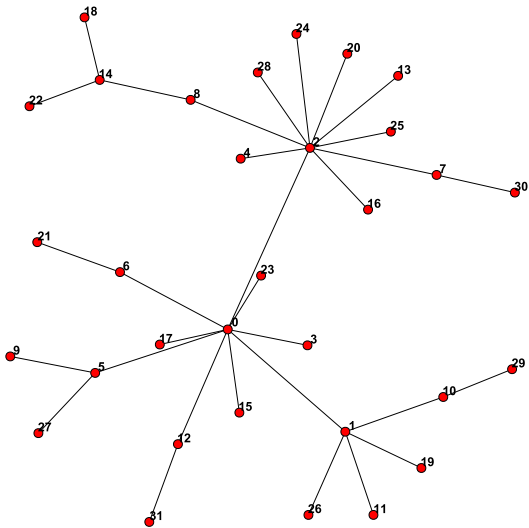
Barabasi-Albert graphs $n = 30, m = 1, \alpha = 1.1$



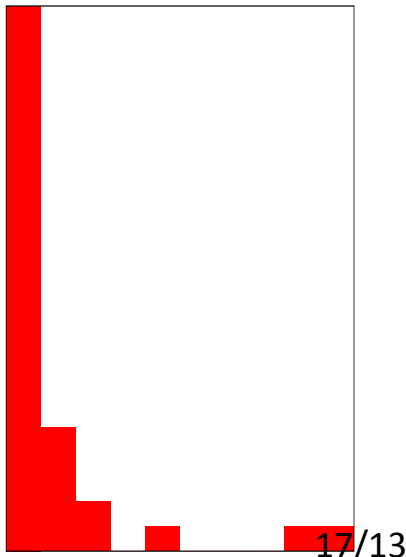
Degrees distributions



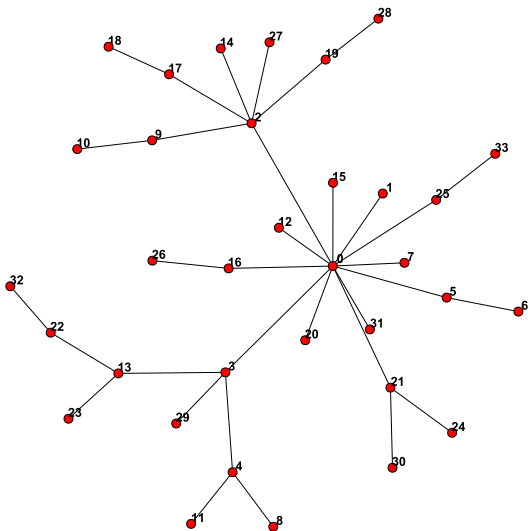
Barabasi-Albert graphs $n = 32, m = 1, \alpha = 1.1$



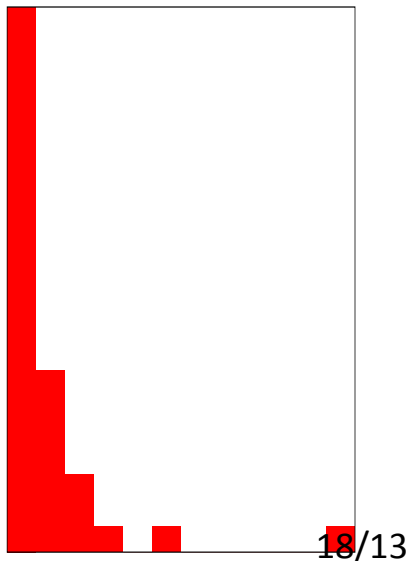
Degrees distributions



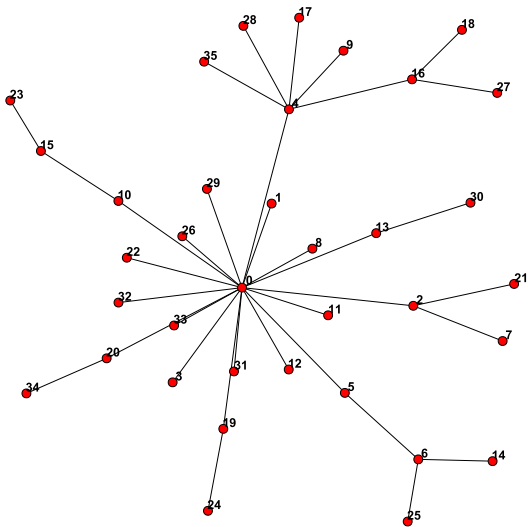
Barabasi-Albert graphs $n = 34, m = 1, \alpha = 1.1$



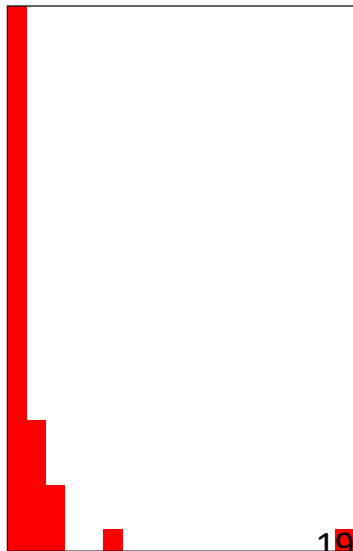
Degrees distributions



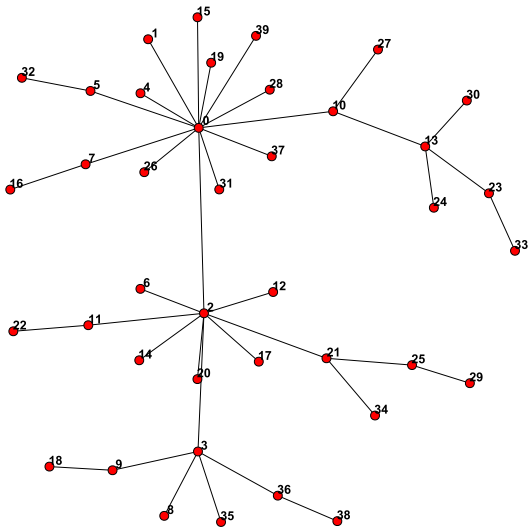
Barabasi-Albert graphs $n = 36, m = 1, \alpha = 1.1$



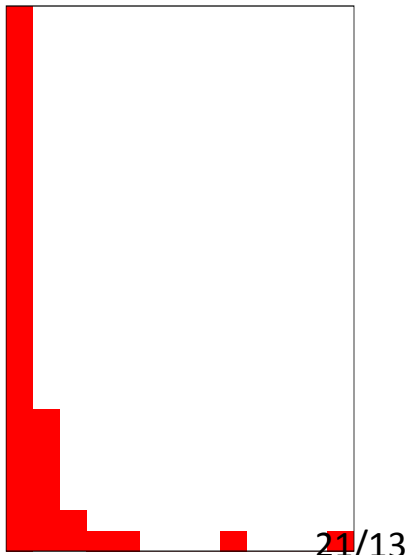
Degrees distributions



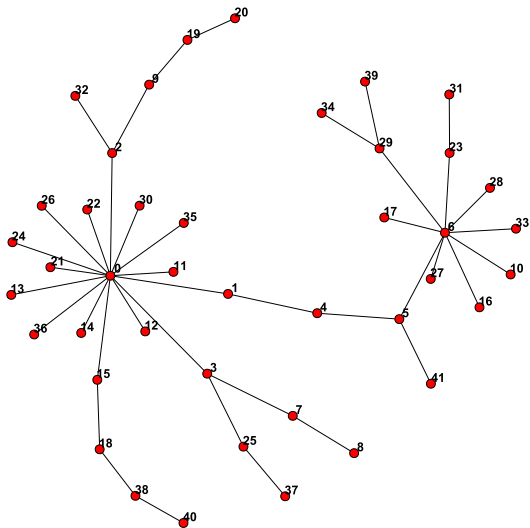
Barabasi-Albert graphs $n = 40, m = 1, \alpha = 1.1$



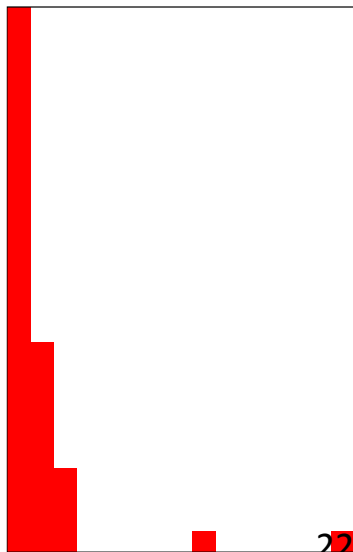
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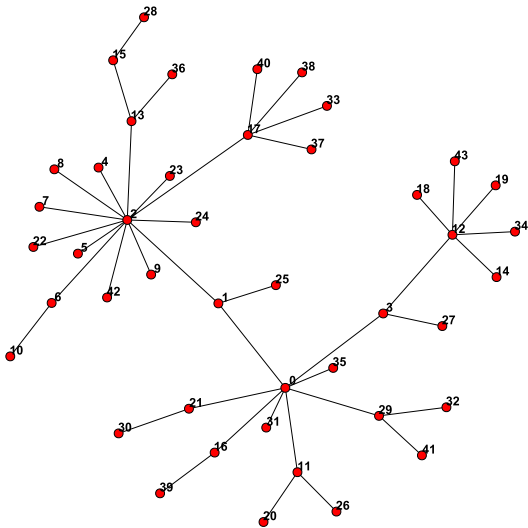
Barabasi-Albert graphs $n = 42, m = 1, \alpha = 1.1$



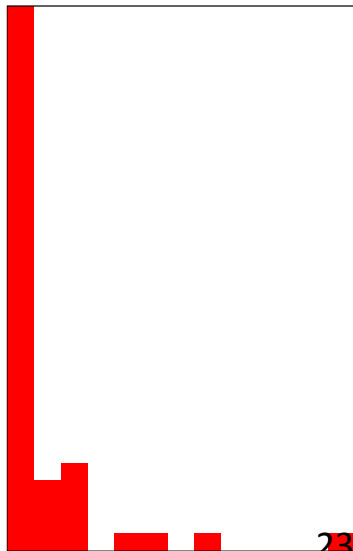
Degrees distributions



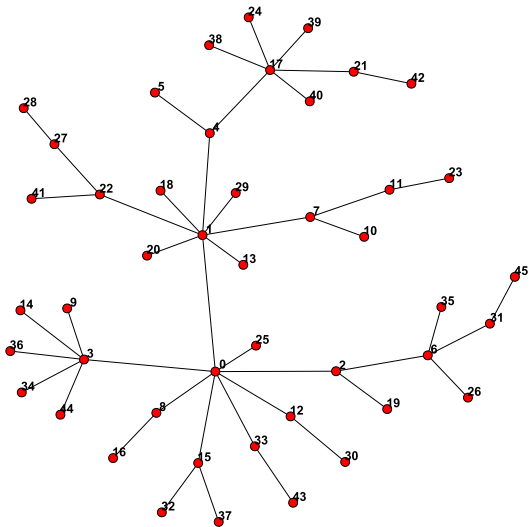
Barabasi-Albert graphs $n = 44, m = 1, \alpha = 1.1$



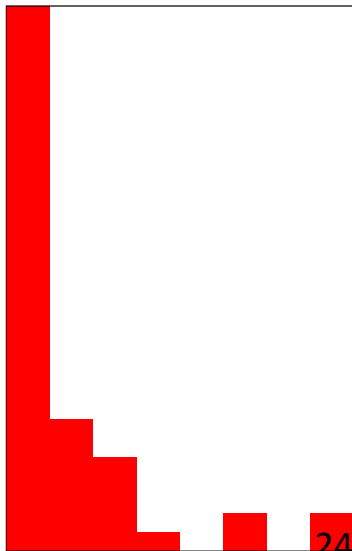
Degrees distributions



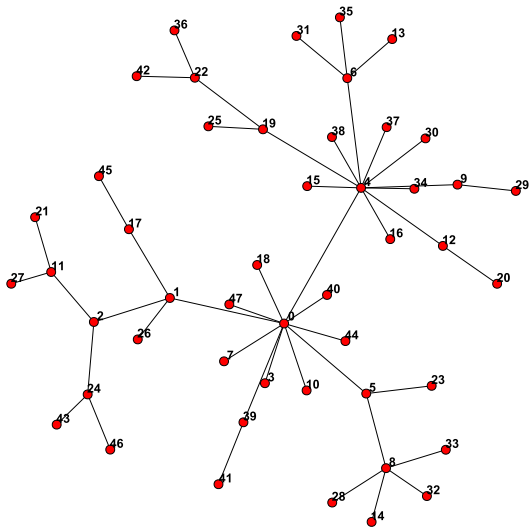
Barabasi-Albert graphs $n = 46, m = 1, \alpha = 1.1$



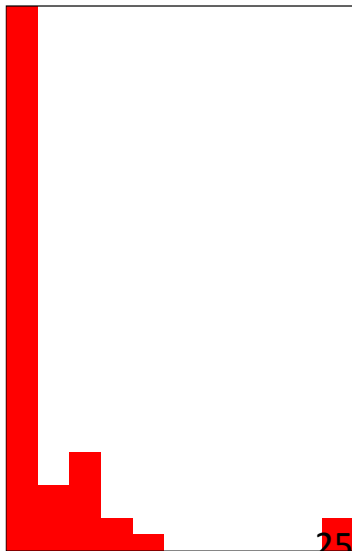
Degrees distributions



Barabasi-Albert graphs $n = 48, m = 1, \alpha = 1.1$

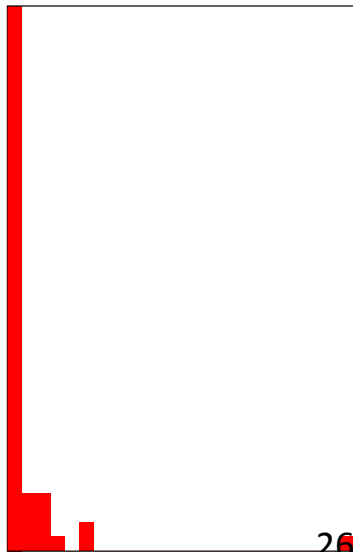
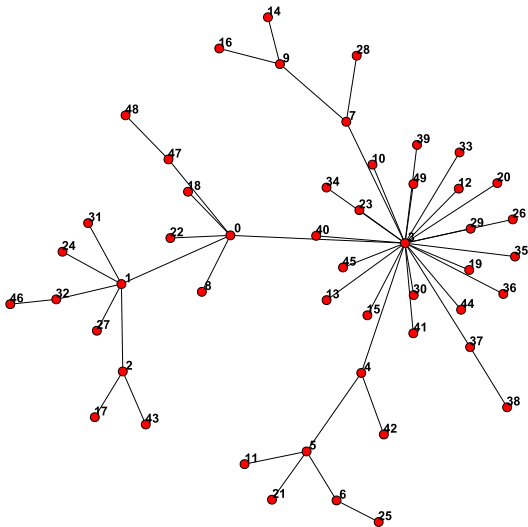


Degrees distributions

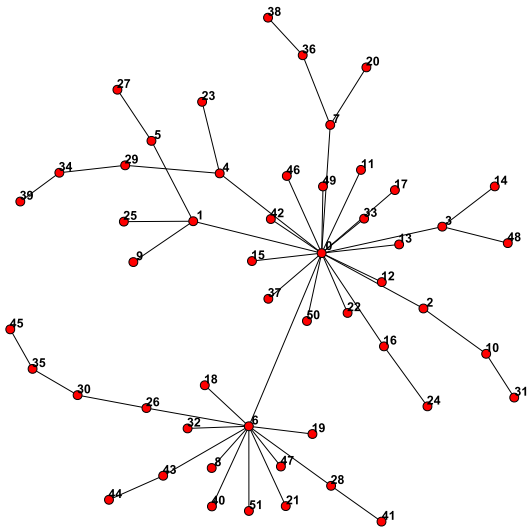


Barabasi-Albert graphs $n = 50, m = 1, \alpha = 1.1$

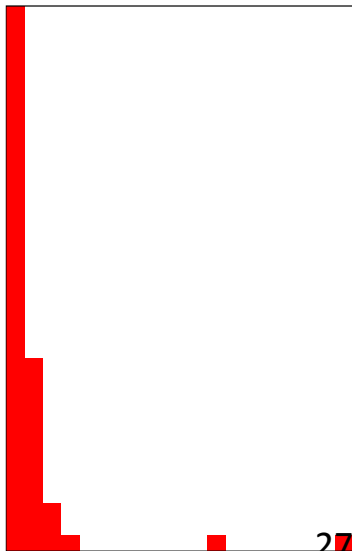
Degrees distributions



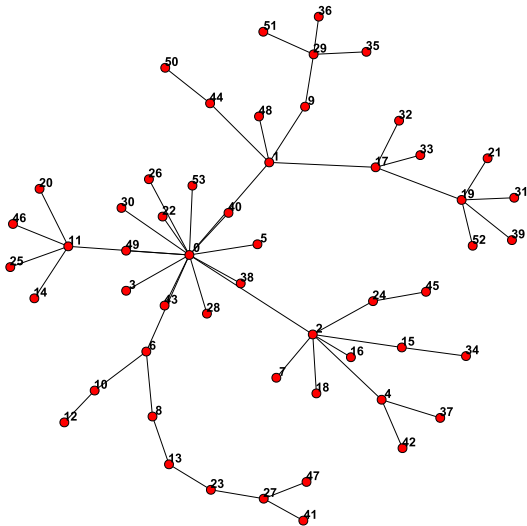
Barabasi-Albert graphs $n = 52, m = 1, \alpha = 1.1$



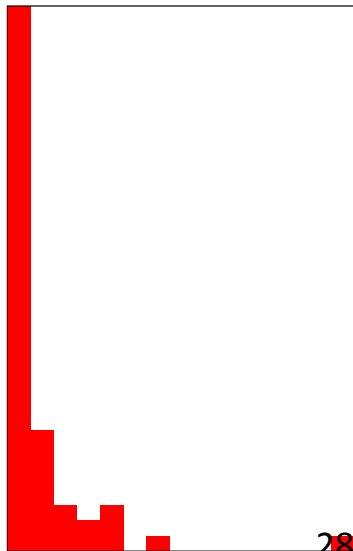
Degrees distributions



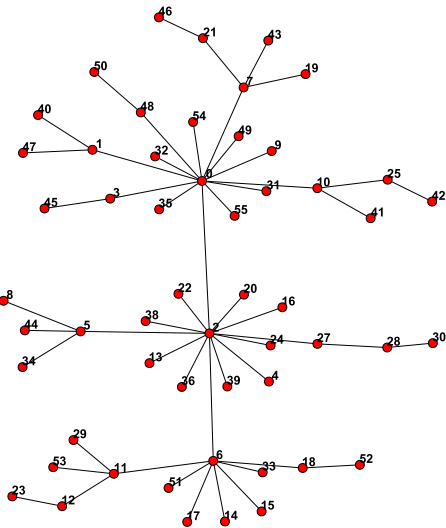
Barabasi-Albert graphs $n = 54, m = 1, \alpha = 1.1$



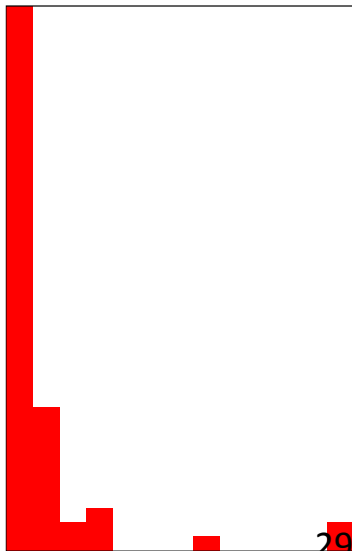
Degrees distributions



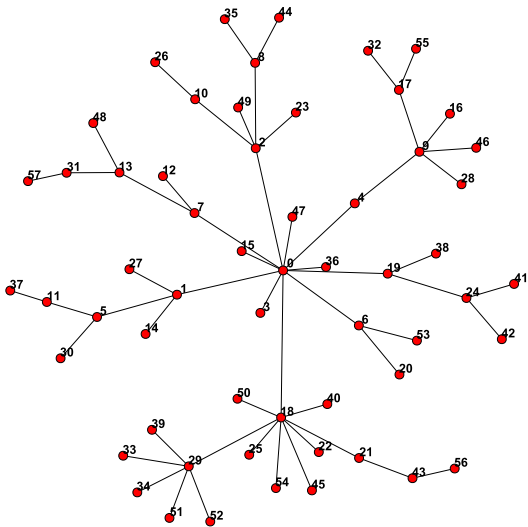
Barabasi-Albert graphs $n = 56, m = 1, \alpha = 1.1$



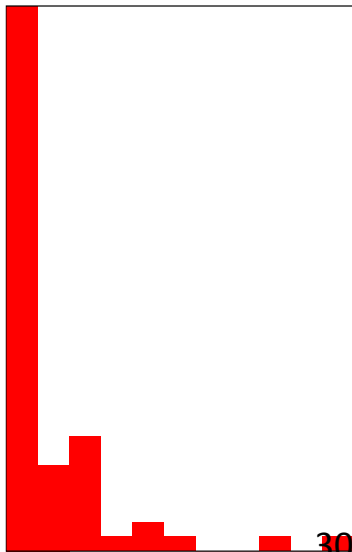
Degrees distributions



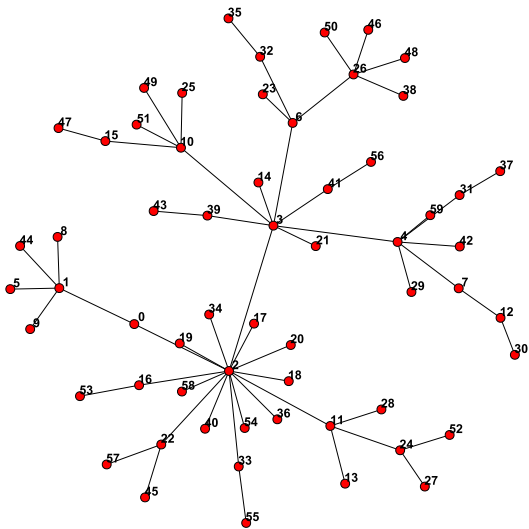
Barabasi-Albert graphs $n = 58, m = 1, \alpha = 1.1$



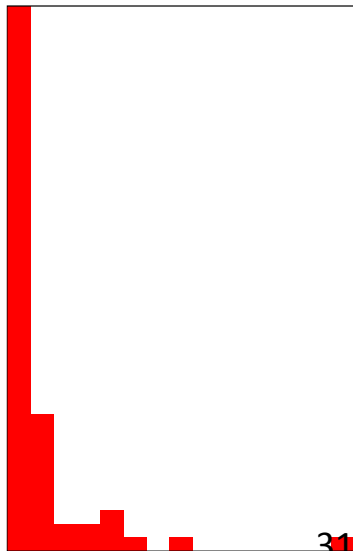
Degrees distributions



Barabasi-Albert graphs $n = 60, m = 1, \alpha = 1.1$

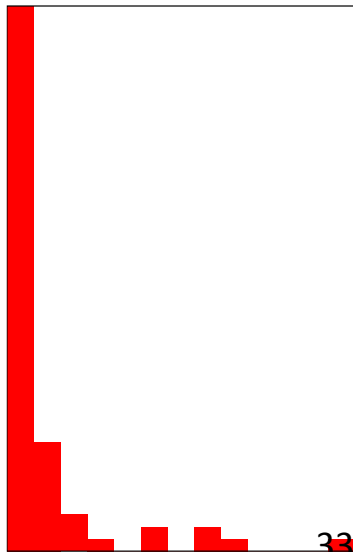
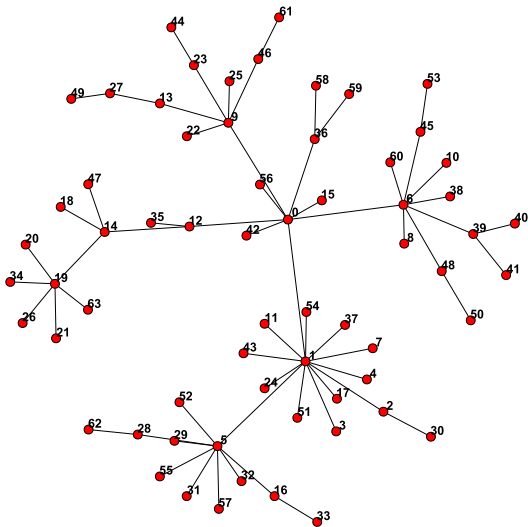


Degrees distributions

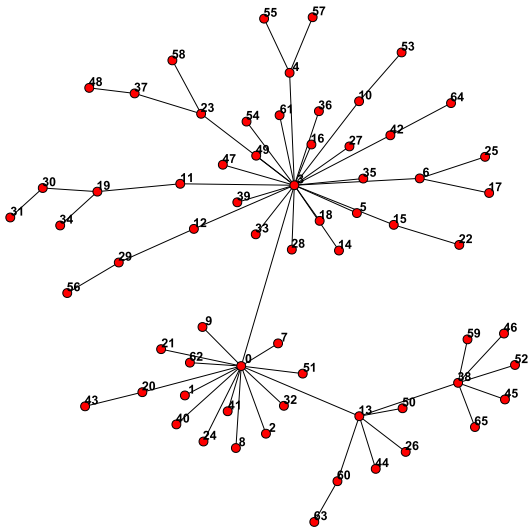


Barabasi-Albert graphs $n = 64, m = 1, \alpha = 1.1$

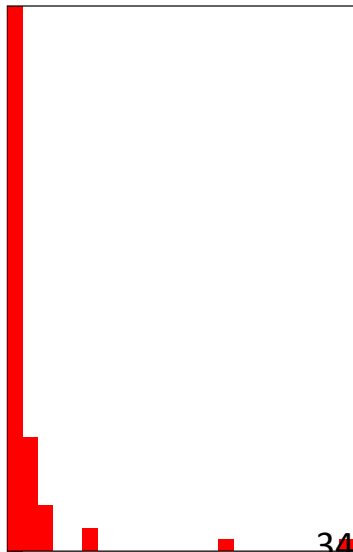
Degrees distributions



Barabasi-Albert graphs $n = 66, m = 1, \alpha = 1.1$

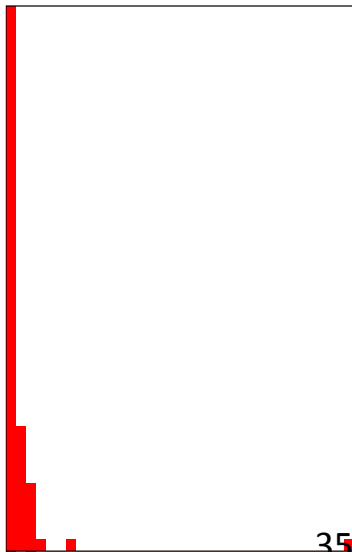
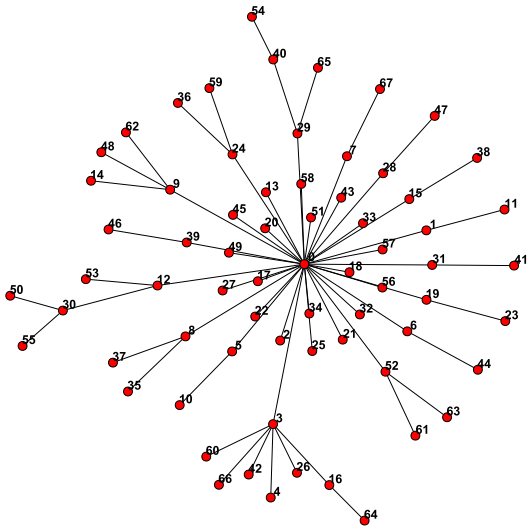


Degrees distributions



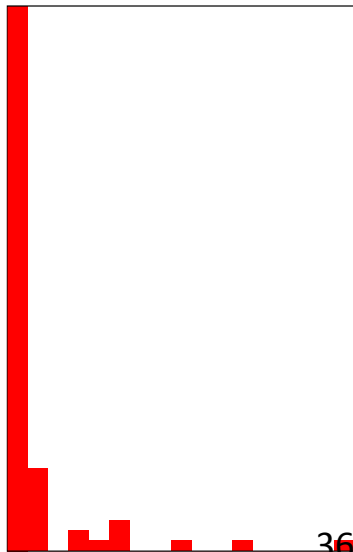
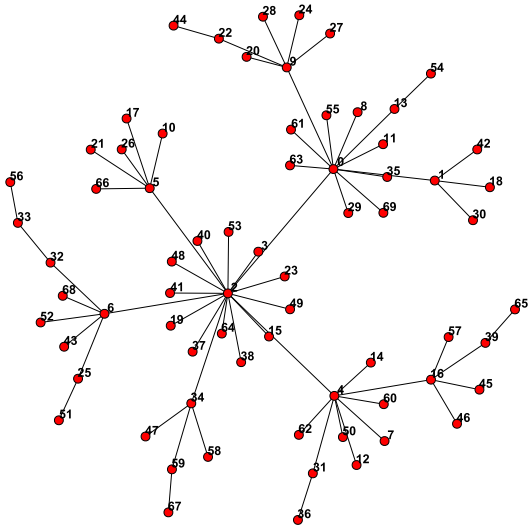
Barabasi-Albert graphs $n = 68, m = 1, \alpha = 1.1$

Degrees distributions



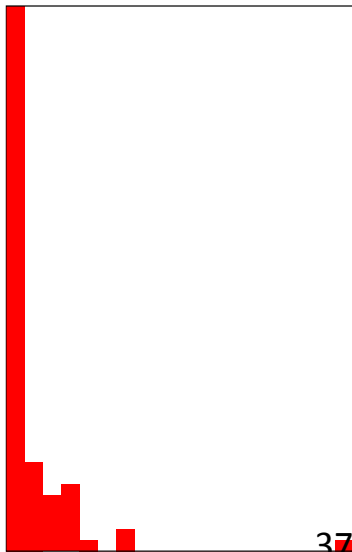
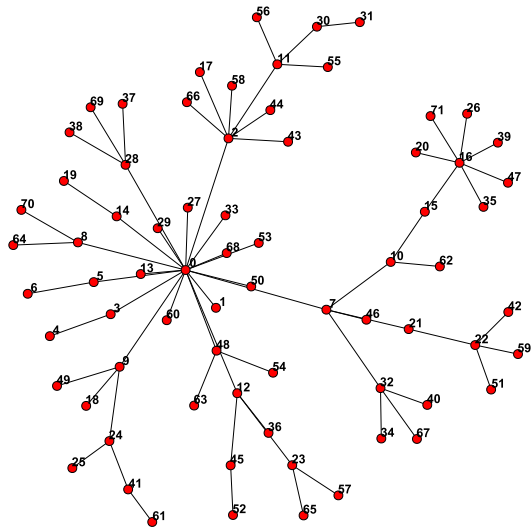
Barabasi-Albert graphs $n = 70, m = 1, \alpha = 1.1$

Degrees distributions



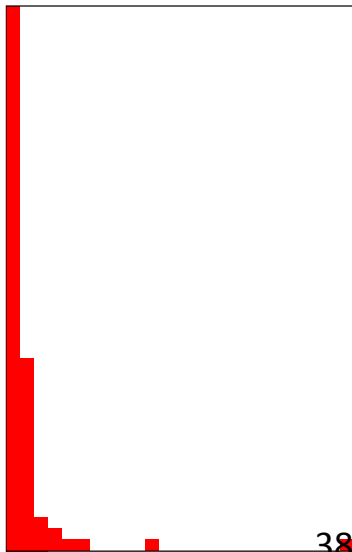
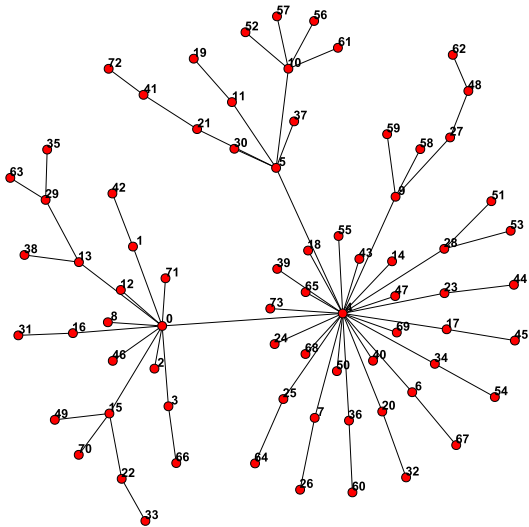
Barabasi-Albert graphs $n = 72, m = 1, \alpha = 1.1$

Degrees distributions



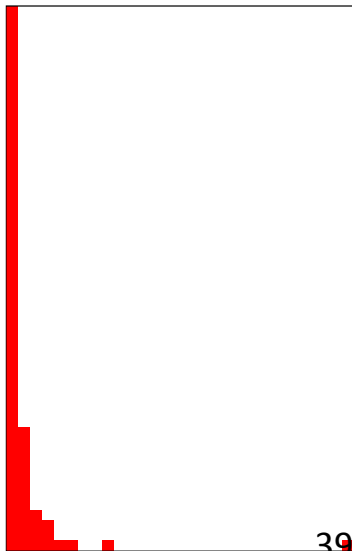
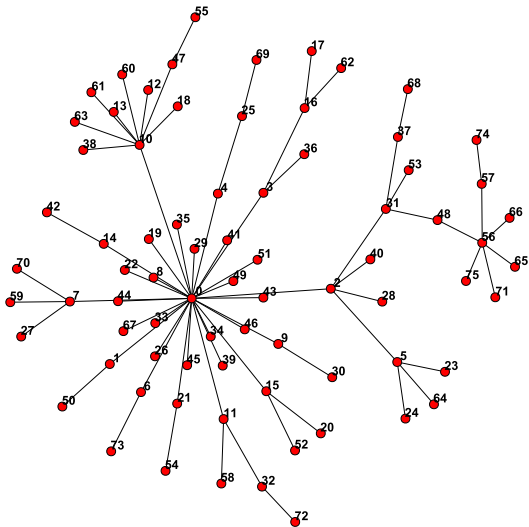
Barabasi-Albert graphs $n = 74, m = 1, \alpha = 1.1$

Degrees distributions



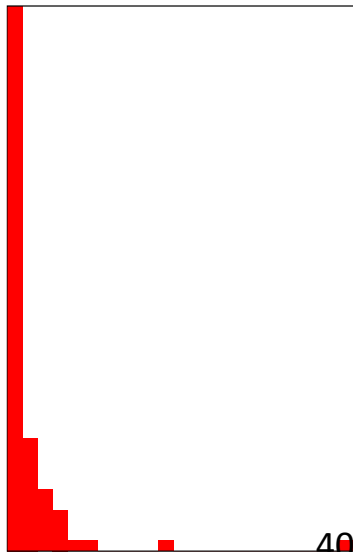
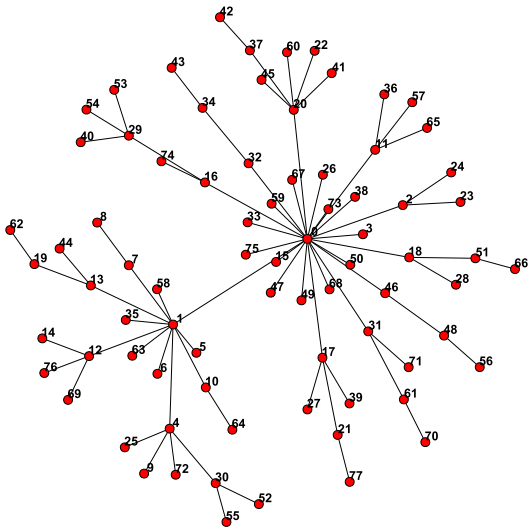
Barabasi-Albert graphs $n = 76, m = 1, \alpha = 1.1$

Degrees distributions



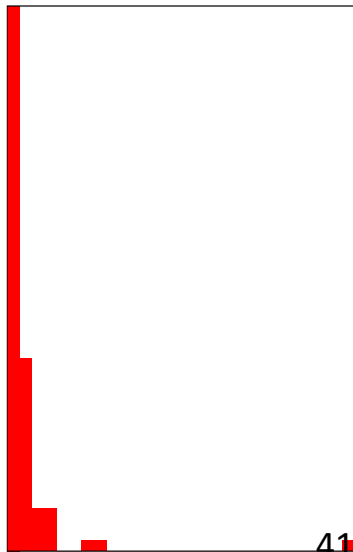
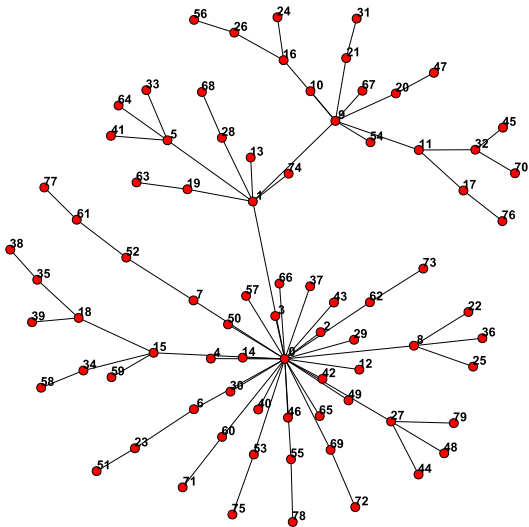
Barabasi-Albert graphs $n = 78, m = 1, \alpha = 1.1$

Degrees distributions



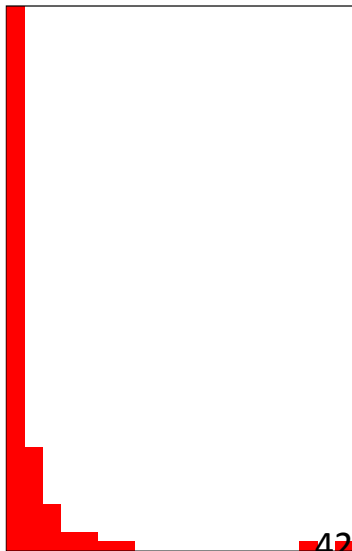
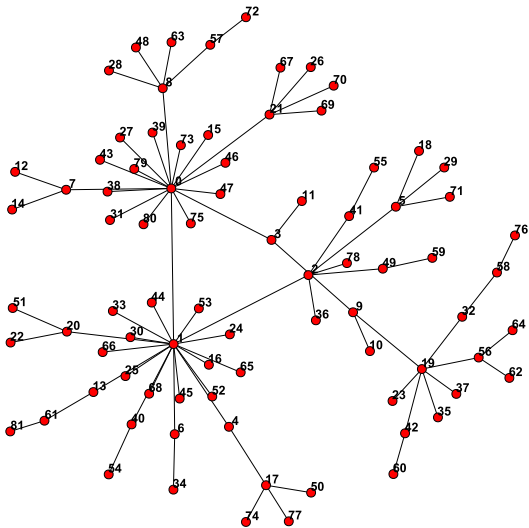
Barabasi-Albert graphs $n = 80, m = 1, \alpha = 1.1$

Degrees distributions



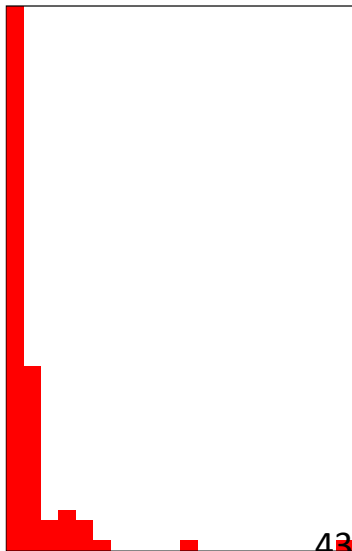
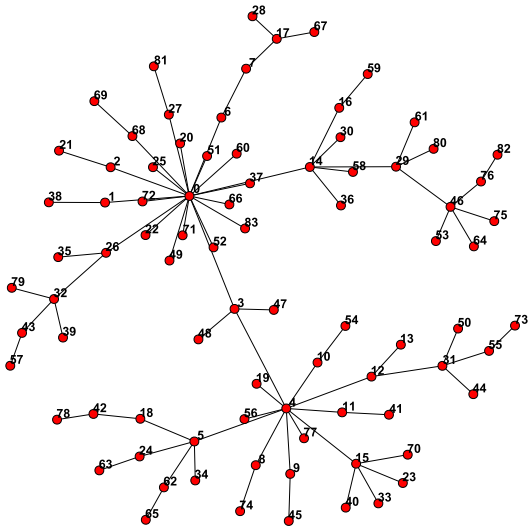
Barabasi-Albert graphs $n = 82, m = 1, \alpha = 1.1$

Degrees distributions



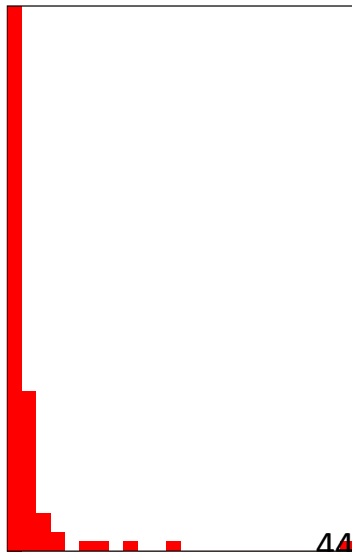
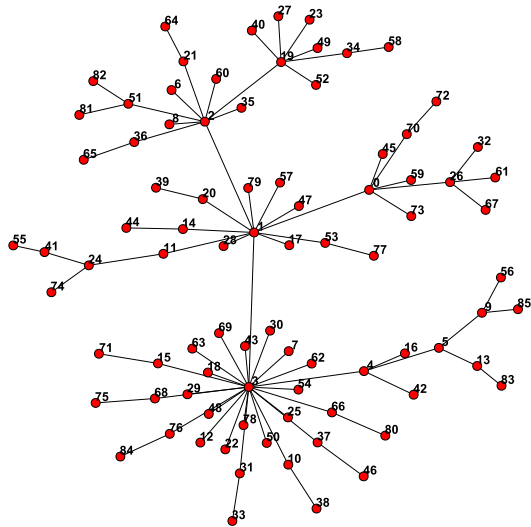
Barabasi-Albert graphs $n = 84, m = 1, \alpha = 1.1$

Degrees distributions



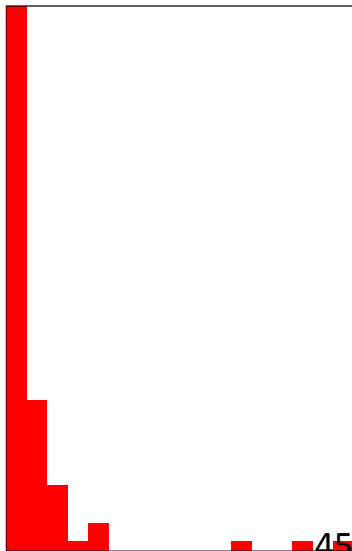
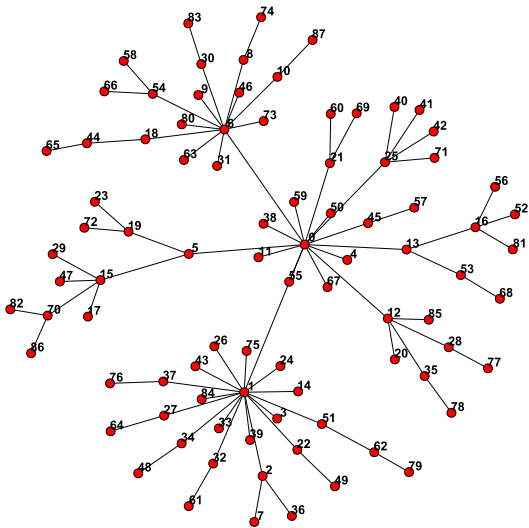
Barabasi-Albert graphs $n = 86, m = 1, \alpha = 1.1$

Degrees distributions



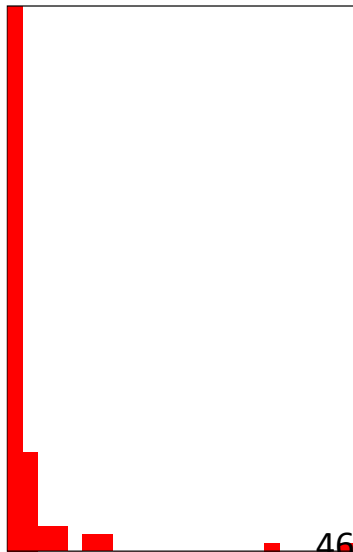
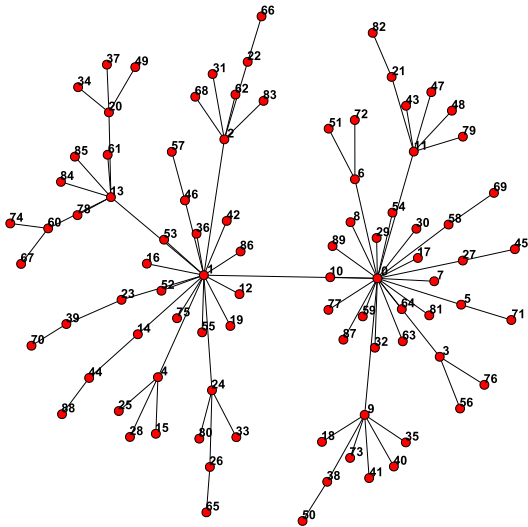
Barabasi-Albert graphs $n = 88, m = 1, \alpha = 1.1$

Degrees distributions



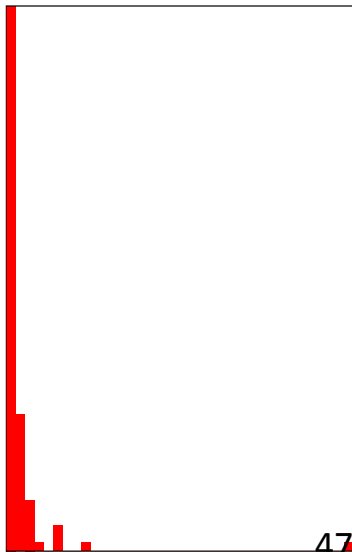
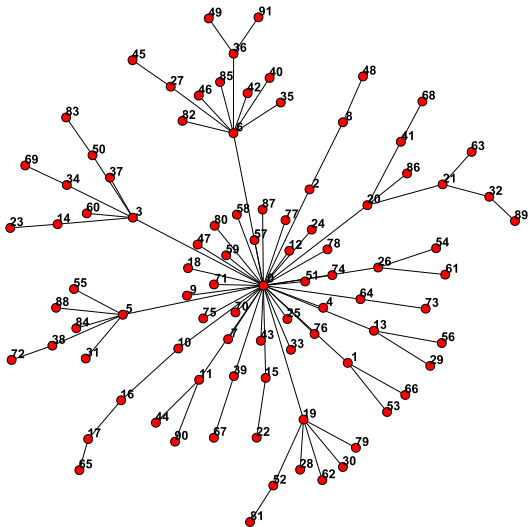
Barabasi-Albert graphs $n = 90, m = 1, \alpha = 1.1$

Degrees distributions



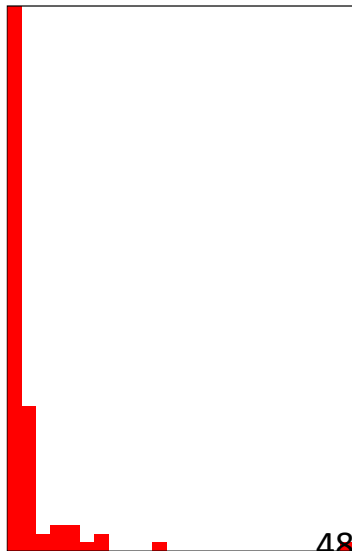
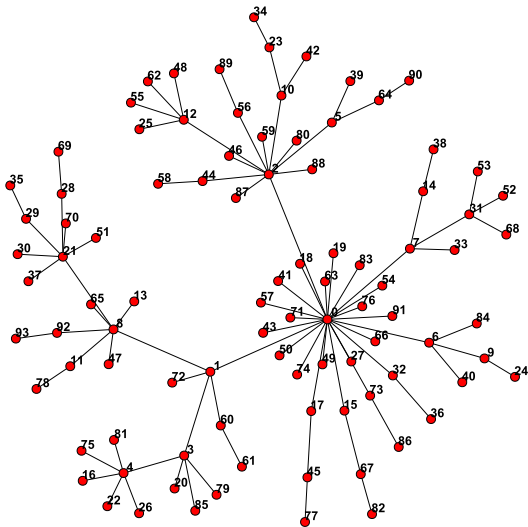
Barabasi-Albert graphs $n = 92, m = 1, \alpha = 1.1$

Degrees distributions



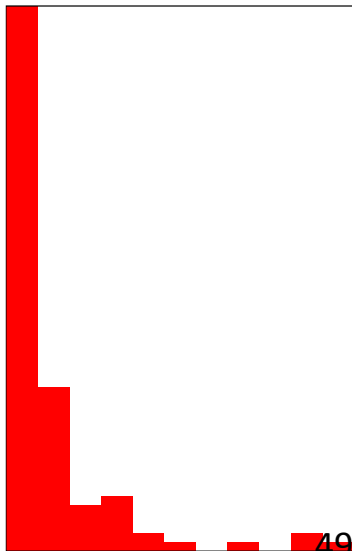
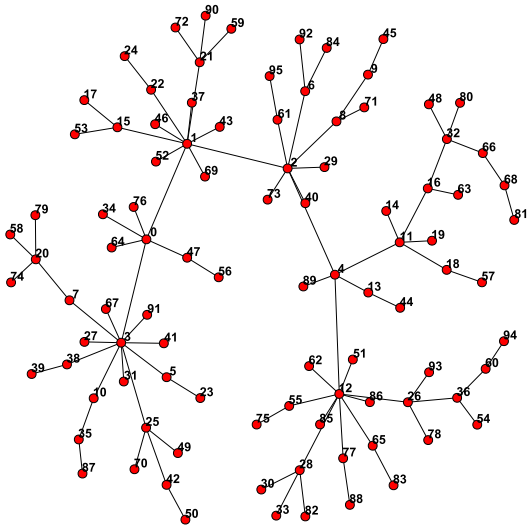
Barabasi-Albert graphs $n = 94, m = 1, \alpha = 1.1$

Degrees distributions



Barabasi-Albert graphs $n = 96, m = 1, \alpha = 1.1$

Degrees distributions



Barabasi-Albert graphs $n = 98, m = 1, \alpha = 1.1$

Degrees distributions

