The undirected Co-authorship graph has n = 4158 nodes and m = 13428 edges.

Clustering and Diameter analysis

Global clustering coefficient: 0.6288944756689877

Average clustering coefficient: 0.5568782161697919

Maximum diameter: 17

Average diameter: 6.049380016182999

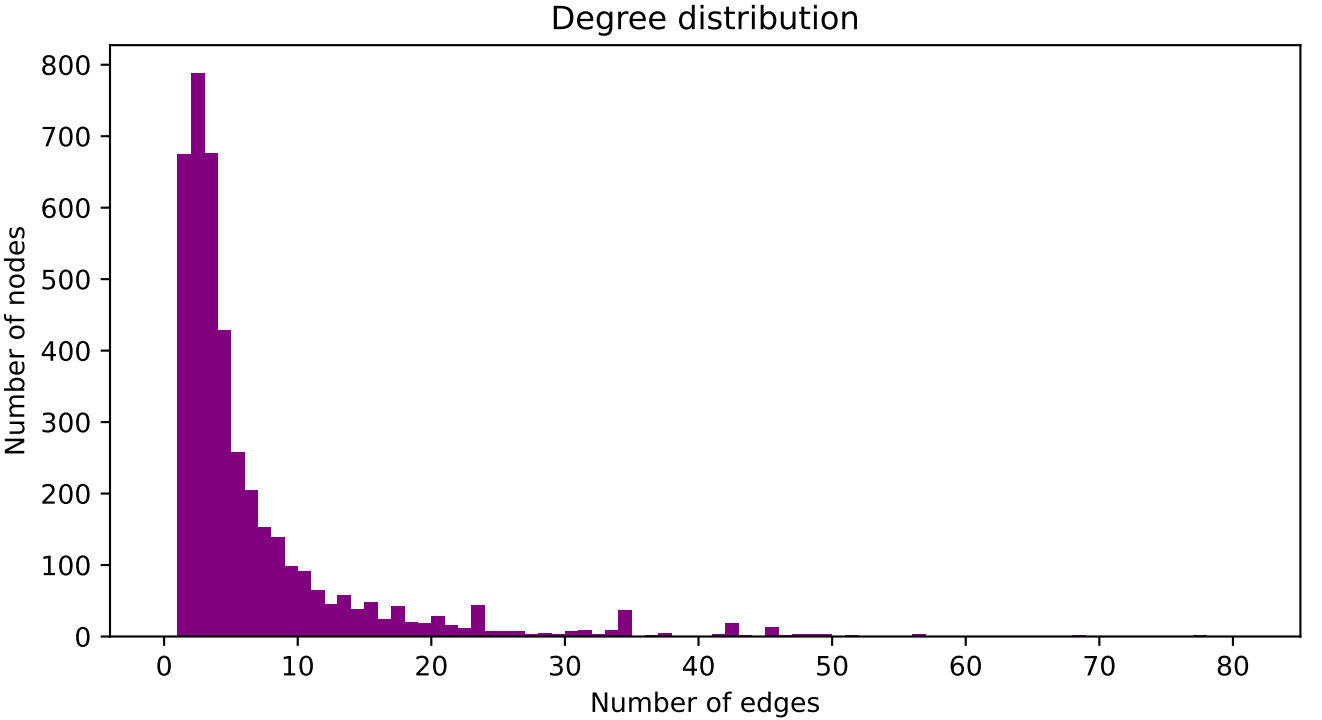
Erdos-Renyi comparison

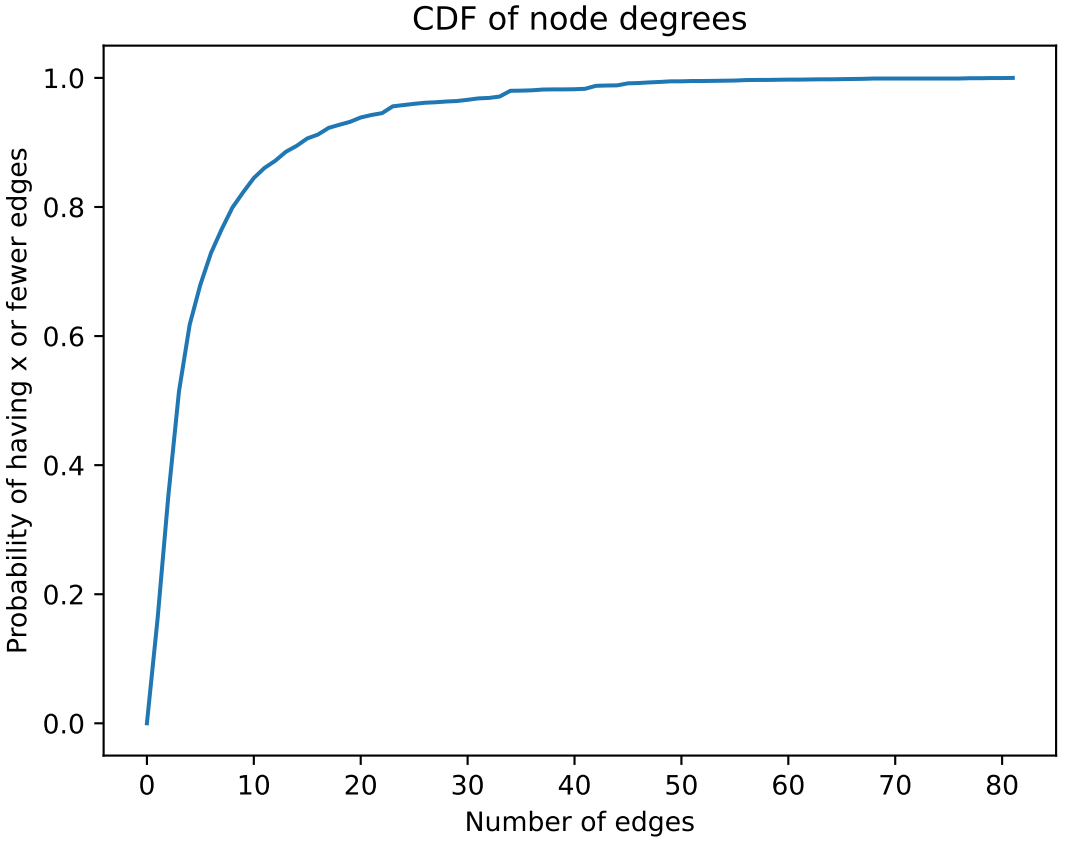
Total number of triangles: 47779

An equivalent Erdos-Renyi graph with n=4158 nodes would have parameter p=0.015861688593415416.
This is because the expected number of triangles in an Erdos-Renyi graph is given by E[T] = (n choose 3) * p^3
where (n choose 3) is the number of possible triangles in the graph
and p^3 is the probability that each of the 3 nodes exist independently

The degree distribution for an Erdos-Renyi graph should be binomial.
We can conclude this mathematically without a histogram.
This is because every edge has probability p of existing such that each node has the same probability of having degree k,
specifically Pr(d = k) = Bin(n-1, k).

Real-world networks like this one of co-authorship are known to have a heavy-tail degree distribution,
described by the Pareto distribution, so we know an Erdos-Renyi model would be a poor model for this graph.


Degree distribution
Number of nodes
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
Number of edges


CDF of node degrees
Probability of having x or fewer edges
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
Number of edges