Communities were created using the Stochastic Block Model (SBM) and Lancichinetti-Fortunato-Radicchi (LFR) benchmark following two different scenarios - see below. The settings for each model were chosen to create communities as similar as possible, while retaining the desired difference in degree distribution - characteristic of the LFR.

(i) Isolated communities

- **SBM:** intra= 0.01 / inter = 0.0001, such that the average degree is app. 10 and max degree is between 20 and 25

- **LFR:** averageDegree = 10 / maxDegree = 40 / mixingParameter = 0.015

(ii) More connected communities:

- **SBM:** intra= 0.02 / inter = 0.0001, such that the average degree is app. 20 and max degree varies between 30 and 40

- **LFR:** averageDegree = 20 / maxDegree = 50 / mixingParameter = 0.05

Communities were created 10 times for each of these 4 experiments. The node list, edge list, and degree distribution for each iteration can be found in the folder. These are used to run all subsequent experiments.

**Isolated communities**

SBM:

1.

community 1 → average degree = ​​10.22 / max degree = 20

community 2 → average degree = 10.284 / max degree = 22

2.

community 1 → average degree = ​​10.045 / max degree = 23

community 2 → average degree = 10.133 / max degree = 26

3.

community 1 → average degree = ​​10.15 / max degree = 21

community 2 → average degree = 9.924 / max degree = 21

4.

community 1 → average degree = ​​ 9.98 / max degree = 20

community 2 → average degree = 10.19 / max degree = 26

5.

community 1 → average degree = ​​ 10.166 / max degree = 20

community 2 → average degree = 10.198 / max degree = 23

6.

community 1 → average degree = ​​ 10.034 / max degree = 18

community 2 → average degree = 9.992 / max degree = 20

7.

community 1 → average degree = ​​10.082 / max degree = 22

community 2 → average degree = 9.91 / max degree = 20

8.

community 1 → average degree = ​​ 10.153 / max degree = 22

community 2 → average degree = 10.029 / max degree = 22

9.

community 1 → average degree = ​​ 9.853 / max degree = 23

community 2 → average degree = 10.079 / max degree = 28

10.

community 1 → average degree = ​​ 10.188 / max degree = 22

community 2 → average degree = 10.328 / max degree = 25

LFR:

1.

community 1 → average degree = ​​ 9.217 / max degree = 40

community 2 → average degree = 9.511 / max degree = 40

2.

community 1 → average degree = 9.153​​ / max degree = 39

community 2 → average degree = 9.417 / max degree = 40

3.

community 1 → average degree = ​​ 9.392 / max degree = 40

community 2 → average degree = 9.31 / max degree = 40

4.

community 1 → average degree = ​​ 9.597 / max degree = 40

community 2 → average degree = 9.595 / max degree = 40

5.

community 1 → average degree = ​​ 9.792 / max degree = 40

community 2 → average degree = 9.268 / max degree = 40

**More connected communities**

SBM:

1.

community 1 → average degree = ​​19.981 / max degree = 34

community 2 → average degree = 19.729 / max degree = 35

2.

community 1 → average degree = ​​19.903 / max degree = 38

community 2 → average degree = 20.059 / max degree = 40

3.

community 1 → average degree = ​​ 20.028 / max degree = 35

community 2 → average degree = 19.746 / max degree = 34

4.

community 1 → average degree = ​​20.197 / max degree = 40

community 2 → average degree = 19.951 / max degree = 38

5.

community 1 → average degree = ​​ 20.08 / max degree = 33

community 2 → average degree = 19.716 / max degree = 34

LFR:

1.

community 1 → average degree = ​​ 20.244 / max degree = 50

community 2 → average degree = 19.096 / max degree = 50

2.

community 1 → average degree = ​​19.172 / max degree = 50

community 2 → average degree = 19.418 / max degree = 50

3.

community 1 → average degree = ​​ 19.557 / max degree = 50

community 2 → average degree = 19.531 / max degree = 50

4.

community 1 → average degree = 19.703​​ / max degree = 50

community 2 → average degree = 19.327 / max degree = 50

5.

community 1 → average degree = ​​ 19.625 / max degree = 50

community 2 → average degree =19.683 / max degree = 50