

A fractional (q, q') non-extensive information dimension of for complex networks

Barabasi-Albert Networks

The Barabasi-Albert (BA) model generated 225 networks, as listed in Table S1. The model was tuned using the total nodes (n) of the network, the initial nodes (n_0), and the average node degree (ad). The network name is given following the pattern BA- n - n_0 - ad ; for example, BA-3500-8-4 denotes a network with 3500 nodes that was generated using 8 initial nodes with an average node degree of 4.

Table S1. The SBICR, d_I , $d_{q,q'}$, q , and q' values for the information model Eq. (10) and the fractional (q, q') information model Eq. (12) on BA networks.

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-2000-10-1	2000	2779	-66.469	-61.918	4.092	1.506	1.365	1.003
BA-2000-10-2	2000	4244	-45.812	-41.061	4.585	1.471	1.394	0.998
BA-2000-10-3	2000	6056	-35.015	-30.950	4.966	1.492	1.406	0.996
BA-2000-10-4	2000	8012	-29.250	-25.619	5.250	1.490	1.419	0.995
BA-2000-10-5	2000	9996	-29.144	-25.289	6.038	1.572	1.494	0.997
BA-2000-10-6	2000	11986	-22.879	-19.331	5.653	1.403	1.447	0.994
BA-2000-10-7	2000	13975	-23.357	-20.219	6.531	1.701	1.489	0.993
BA-2000-10-8	2000	15965	-23.335	-20.339	6.964	1.729	1.531	0.997
BA-2000-10-9	2000	17955	-13.803	-10.303	4.782	0.864	1.404	0.996
BA-2000-2-1	2000	2701	-77.869	-71.848	4.045	1.562	1.345	1.003
BA-2000-3-1	2000	2724	-81.969	-75.237	3.984	1.466	1.355	1.010
BA-2000-3-2	2000	4191	-46.109	-41.367	4.552	1.475	1.387	0.998
BA-2000-4-1	2000	2703	-81.489	-75.059	3.930	1.436	1.358	1.007
BA-2000-4-2	2000	4162	-45.961	-41.318	4.549	1.470	1.386	0.998
BA-2000-4-3	2000	6042	-35.118	-31.088	4.876	1.449	1.404	0.996
BA-2000-5-1	2000	2685	-74.896	-69.654	3.973	1.493	1.356	1.002
BA-2000-5-2	2000	4223	-45.960	-41.193	4.581	1.483	1.390	0.997
BA-2000-5-3	2000	6040	-35.120	-31.005	4.924	1.459	1.411	0.996
BA-2000-5-4	2000	7998	-29.358	-25.729	5.259	1.484	1.423	0.995
BA-2000-6-1	2000	2799	-71.407	-66.250	4.132	1.533	1.361	1.004
BA-2000-6-2	2000	4245	-46.049	-41.268	4.561	1.473	1.388	0.998
BA-2000-6-3	2000	6054	-35.194	-31.101	4.900	1.453	1.408	0.996
BA-2000-6-4	2000	7998	-29.256	-25.561	5.233	1.475	1.423	0.995
BA-2000-6-5	2000	9986	-29.246	-25.444	6.001	1.561	1.491	0.997
BA-2000-7-1	2000	2751	-69.422	-64.546	4.084	1.521	1.359	1.003
BA-2000-7-2	2000	4216	-46.066	-41.268	4.535	1.456	1.390	0.997
BA-2000-7-3	2000	6052	-35.095	-31.011	4.954	1.469	1.410	0.996
BA-2000-7-4	2000	7998	-29.227	-25.567	5.196	1.464	1.420	0.995
BA-2000-7-5	2000	9989	-29.194	-25.355	6.025	1.568	1.492	0.997
BA-2000-7-6	2000	11979	-22.896	-19.412	5.709	1.435	1.443	0.994
BA-2000-8-1	2000	2781	-69.594	-64.366	4.126	1.519	1.368	1.004
BA-2000-8-2	2000	4214	-45.430	-40.750	4.564	1.456	1.394	0.997

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-2000-8-3	2000	6041	-35.130	-31.043	4.937	1.462	1.412	0.996
BA-2000-8-4	2000	8015	-29.252	-25.540	5.222	1.468	1.422	0.995
BA-2000-8-5	2000	9988	-29.190	-25.300	6.041	1.565	1.497	0.997
BA-2000-8-6	2000	11980	-22.899	-19.305	5.664	1.393	1.449	0.993
BA-2000-8-7	2000	13972	-23.375	-20.164	6.482	1.664	1.494	0.993
BA-2000-9-1	2000	2763	-72.528	-65.485	4.055	1.474	1.368	1.010
BA-2000-9-2	2000	4221	-45.743	-41.101	4.571	1.472	1.389	0.998
BA-2000-9-3	2000	6047	-35.091	-30.980	4.949	1.464	1.413	0.996
BA-2000-9-4	2000	8008	-29.229	-25.554	5.225	1.474	1.421	0.995
BA-2000-9-5	2000	9993	-29.131	-25.308	6.066	1.605	1.486	0.997
BA-2000-9-6	2000	11982	-22.916	-19.394	5.672	1.417	1.444	0.993
BA-2000-9-7	2000	13973	-23.469	-20.347	6.531	1.707	1.487	0.994
BA-2000-9-8	2000	15964	-23.321	-20.317	6.954	1.711	1.534	0.998
BA-3000-10-1	3000	4165	-70.427	-64.996	4.324	1.541	1.361	1.002
BA-3000-10-2	3000	6365	-47.296	-42.116	4.621	1.382	1.388	0.998
BA-3000-10-3	3000	9097	-36.074	-31.568	4.840	1.326	1.401	0.996
BA-3000-10-4	3000	12017	-29.922	-25.712	5.004	1.282	1.405	0.996
BA-3000-10-5	3000	14998	-30.372	-26.375	6.088	1.543	1.472	0.997
BA-3000-10-6	3000	17985	-23.070	-18.850	5.226	1.126	1.422	0.996
BA-3000-10-7	3000	20975	-23.827	-20.036	6.239	1.449	1.468	0.994
BA-3000-10-8	3000	23965	-24.155	-20.717	6.966	1.667	1.513	0.994
BA-3000-10-9	3000	26955	-24.038	-20.728	7.363	1.699	1.540	0.998
BA-3000-2-1	3000	4121	-80.308	-73.839	4.164	1.466	1.356	1.001
BA-3000-3-1	3000	4067	-85.249	-78.052	4.229	1.510	1.359	1.005
BA-3000-3-2	3000	6306	-47.640	-42.380	4.508	1.347	1.383	0.997
BA-3000-4-1	3000	4112	-89.723	-81.642	4.185	1.495	1.368	1.005
BA-3000-4-2	3000	6301	-47.430	-42.204	4.481	1.340	1.379	0.997
BA-3000-4-3	3000	9052	-36.002	-31.547	4.765	1.298	1.396	0.997
BA-3000-5-1	3000	4105	-85.077	-77.855	4.229	1.466	1.368	1.008
BA-3000-5-2	3000	6275	-47.438	-42.300	4.472	1.349	1.376	0.998
BA-3000-5-3	3000	9062	-36.071	-31.567	4.815	1.323	1.398	0.997
BA-3000-5-4	3000	12009	-29.816	-25.547	4.967	1.260	1.405	0.996
BA-3000-6-1	3000	4049	-82.091	-75.163	4.176	1.507	1.357	1.003
BA-3000-6-2	3000	6315	-47.511	-42.281	4.524	1.358	1.383	0.998
BA-3000-6-3	3000	9066	-36.049	-31.540	4.818	1.333	1.396	0.996
BA-3000-6-4	3000	12010	-29.850	-25.593	4.960	1.267	1.405	0.996
BA-3000-6-5	3000	14986	-30.307	-26.312	6.081	1.542	1.471	0.997
BA-3000-7-1	3000	4103	-78.489	-72.525	4.251	1.536	1.355	1.003
BA-3000-7-2	3000	6277	-47.365	-42.138	4.507	1.342	1.385	0.997
BA-3000-7-3	3000	9068	-36.023	-31.540	4.779	1.306	1.398	0.997
BA-3000-7-4	3000	12002	-29.921	-25.646	5.002	1.259	1.413	0.996
BA-3000-7-5	3000	14986	-30.343	-26.382	6.071	1.548	1.467	0.997
BA-3000-7-6	3000	17979	-22.976	-18.643	5.150	1.079	1.426	0.996
BA-3000-8-1	3000	4176	-73.343	-67.607	4.336	1.581	1.351	1.002
BA-3000-8-2	3000	6340	-47.464	-42.239	4.592	1.375	1.389	0.998
BA-3000-8-3	3000	9090	-35.989	-31.502	4.873	1.345	1.398	0.996

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-3000-8-4	3000	12005	-29.911	-25.687	4.975	1.266	1.406	0.996
BA-3000-8-5	3000	14990	-30.339	-26.366	6.054	1.538	1.469	0.997
BA-3000-8-6	3000	17981	-23.176	-18.960	5.252	1.129	1.428	0.996
BA-3000-8-7	3000	20972	-23.948	-20.185	6.275	1.463	1.470	0.994
BA-3000-9-1	3000	4130	-75.378	-68.846	4.244	1.514	1.365	1.002
BA-3000-9-2	3000	6319	-47.371	-42.123	4.544	1.367	1.384	0.998
BA-3000-9-3	3000	9065	-36.025	-31.518	4.825	1.315	1.402	0.997
BA-3000-9-4	3000	12015	-29.887	-25.670	4.966	1.260	1.406	0.996
BA-3000-9-5	3000	14997	-30.399	-26.404	6.058	1.521	1.473	0.997
BA-3000-9-6	3000	17984	-23.056	-18.850	5.211	1.121	1.421	0.996
BA-3000-9-7	3000	20973	-23.831	-20.042	6.251	1.451	1.470	0.994
BA-3000-9-8	3000	23964	-24.152	-20.745	6.948	1.670	1.504	0.995
BA-3500-10-1	3500	4787	-85.739	-76.844	4.180	1.381	1.391	1.008
BA-3500-10-2	3500	7377	-47.604	-42.211	4.612	1.361	1.382	0.998
BA-3500-10-3	3500	10604	-42.782	-37.299	5.495	1.477	1.450	0.999
BA-3500-10-4	3500	14022	-30.112	-25.680	4.869	1.191	1.400	0.997
BA-3500-10-5	3500	17498	-30.763	-26.614	6.050	1.502	1.466	0.997
BA-3500-10-6	3500	20985	-23.109	-18.589	5.000	1.001	1.420	0.997
BA-3500-10-7	3500	24475	-23.991	-19.945	6.087	1.340	1.461	0.995
BA-3500-10-8	3500	27965	-24.419	-20.754	6.906	1.599	1.502	0.995
BA-3500-10-9	3500	31455	-24.420	-20.965	7.412	1.693	1.534	0.998
BA-3500-2-1	3500	4762	-81.989	-75.090	4.259	1.513	1.348	1.001
BA-3500-3-1	3500	4821	-96.631	-86.826	4.228	1.407	1.380	1.013
BA-3500-3-2	3500	7375	-54.217	-48.006	4.899	1.430	1.414	1.000
BA-3500-4-1	3500	4767	-90.652	-82.469	4.252	1.490	1.367	1.005
BA-3500-4-2	3500	7334	-47.951	-42.513	4.512	1.325	1.379	0.998
BA-3500-4-3	3500	10588	-42.801	-37.381	5.491	1.501	1.441	0.999
BA-3500-5-1	3500	4818	-88.698	-80.496	4.212	1.450	1.374	1.004
BA-3500-5-2	3500	7361	-48.062	-42.697	4.552	1.339	1.380	0.998
BA-3500-5-3	3500	10577	-36.206	-31.533	4.723	1.258	1.390	0.997
BA-3500-5-4	3500	14000	-30.051	-25.539	4.847	1.175	1.400	0.996
BA-3500-6-1	3500	4770	-85.417	-77.802	4.328	1.507	1.365	1.006
BA-3500-6-2	3500	7324	-47.863	-42.446	4.454	1.304	1.376	0.998
BA-3500-6-3	3500	10585	-36.260	-31.551	4.732	1.248	1.394	0.997
BA-3500-6-4	3500	14000	-30.007	-25.514	4.869	1.189	1.400	0.997
BA-3500-6-5	3500	17487	-30.763	-26.645	6.057	1.511	1.465	0.997
BA-3500-7-1	3500	4813	-84.680	-77.075	4.315	1.534	1.361	1.003
BA-3500-7-2	3500	7352	-47.816	-42.376	4.525	1.321	1.382	0.998
BA-3500-7-3	3500	10596	-36.204	-31.450	4.732	1.243	1.396	0.997
BA-3500-7-4	3500	14014	-30.058	-25.519	4.844	1.160	1.404	0.997
BA-3500-7-5	3500	17487	-30.716	-26.647	6.054	1.509	1.466	0.996
BA-3500-7-6	3500	20979	-23.085	-18.612	5.049	1.028	1.415	0.997
BA-3500-8-1	3500	4783	-83.015	-76.172	4.296	1.490	1.368	1.005
BA-3500-8-2	3500	7357	-47.918	-42.588	4.542	1.335	1.380	0.998
BA-3500-8-3	3500	10582	-36.219	-31.565	4.715	1.235	1.391	0.997
BA-3500-8-4	3500	14014	-36.867	-31.683	5.902	1.508	1.469	0.998

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-3500-8-5	3500	17490	-30.779	-26.698	6.062	1.523	1.463	0.997
BA-3500-8-6	3500	20980	-23.165	-18.686	5.054	1.024	1.419	0.997
BA-3500-8-7	3500	24472	-24.019	-19.968	6.090	1.340	1.460	0.995
BA-3500-9-1	3500	4852	-78.261	-71.903	4.387	1.556	1.361	1.003
BA-3500-9-2	3500	7384	-47.670	-42.259	4.566	1.334	1.384	0.998
BA-3500-9-3	3500	10598	-36.267	-31.552	4.722	1.244	1.396	0.997
BA-3500-9-4	3500	14013	-30.083	-25.636	4.877	1.186	1.401	0.997
BA-3500-9-5	3500	17494	-30.758	-26.631	6.040	1.499	1.467	0.997
BA-3500-9-6	3500	20982	-23.066	-18.486	4.997	0.984	1.422	0.997
BA-3500-9-7	3500	24473	-24.027	-19.954	6.107	1.339	1.464	0.995
BA-3500-9-8	3500	27964	-24.372	-20.694	6.897	1.596	1.499	0.994
BA-4000-10-1	4000	5538	-82.604	-74.769	4.373	1.492	1.372	1.005
BA-4000-10-2	4000	8415	-54.046	-47.843	4.945	1.422	1.413	1.000
BA-4000-10-3	4000	12110	-43.126	-37.560	5.471	1.467	1.438	0.999
BA-4000-10-4	4000	16016	-37.191	-31.912	5.920	1.481	1.468	0.998
BA-4000-10-5	4000	19997	-31.073	-26.905	6.029	1.483	1.459	0.997
BA-4000-10-6	4000	23985	-23.054	-18.317	4.860	0.929	1.411	0.997
BA-4000-10-7	4000	27975	-24.049	-19.741	5.925	1.227	1.456	0.996
BA-4000-10-8	4000	31965	-24.566	-20.688	6.813	1.527	1.495	0.995
BA-4000-10-9	4000	35955	-24.676	-21.096	7.382	1.676	1.524	0.997
BA-4000-2-1	4000	5372	-92.077	-83.762	4.325	1.504	1.363	1.004
BA-4000-3-1	4000	5544	-92.533	-83.606	4.354	1.507	1.367	1.004
BA-4000-3-2	4000	8427	-54.803	-48.509	4.899	1.422	1.404	1.000
BA-4000-4-1	4000	5427	-91.977	-83.580	4.262	1.438	1.364	1.006
BA-4000-4-2	4000	8398	-54.591	-48.328	4.898	1.403	1.411	0.999
BA-4000-4-3	4000	12085	-43.251	-37.650	5.450	1.451	1.439	0.999
BA-4000-5-1	4000	5452	-86.568	-78.858	4.351	1.515	1.359	1.002
BA-4000-5-2	4000	8381	-54.725	-48.415	4.926	1.414	1.412	1.000
BA-4000-5-3	4000	12093	-36.483	-31.539	4.652	1.178	1.395	0.997
BA-4000-5-4	4000	16007	-30.133	-25.401	4.790	1.116	1.398	0.997
BA-4000-6-1	4000	5486	-90.763	-82.548	4.331	1.455	1.373	1.008
BA-4000-6-2	4000	8400	-54.687	-48.431	4.935	1.430	1.407	1.000
BA-4000-6-3	4000	12079	-36.528	-31.657	4.639	1.198	1.386	0.997
BA-4000-6-4	4000	16006	-37.204	-31.987	5.923	1.488	1.465	0.998
BA-4000-6-5	4000	19991	-31.054	-26.863	6.032	1.495	1.458	0.996
BA-4000-7-1	4000	5455	-90.334	-81.650	4.333	1.440	1.376	1.010
BA-4000-7-2	4000	8362	-48.334	-42.747	4.459	1.277	1.375	0.998
BA-4000-7-3	4000	12108	-36.409	-31.540	4.671	1.194	1.390	0.997
BA-4000-7-4	4000	16002	-30.104	-25.395	4.772	1.113	1.397	0.997
BA-4000-7-5	4000	19994	-31.032	-26.845	6.012	1.484	1.456	0.997
BA-4000-7-6	4000	23979	-23.085	-18.394	4.898	0.944	1.412	0.997
BA-4000-8-1	4000	5447	-78.487	-72.253	4.420	1.561	1.354	1.002
BA-4000-8-2	4000	8417	-48.241	-42.633	4.506	1.295	1.377	0.998
BA-4000-8-3	4000	12085	-43.257	-37.729	5.474	1.460	1.439	0.999
BA-4000-8-4	4000	16024	-30.190	-25.499	4.783	1.127	1.396	0.997
BA-4000-8-5	4000	19992	-31.097	-26.868	5.992	1.464	1.461	0.997

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-4000-8-6	4000	23980	-23.034	-18.271	4.827	0.913	1.412	0.997
BA-4000-8-7	4000	27972	-24.065	-19.766	5.944	1.241	1.455	0.996
BA-4000-9-1	4000	5537	-83.005	-76.146	4.348	1.466	1.374	1.003
BA-4000-9-2	4000	8462	-48.062	-42.598	4.512	1.291	1.377	0.998
BA-4000-9-3	4000	12098	-43.132	-37.554	5.492	1.461	1.441	0.999
BA-4000-9-4	4000	16010	-37.173	-31.923	5.913	1.487	1.465	0.998
BA-4000-9-5	4000	19996	-31.039	-26.802	6.012	1.469	1.462	0.997
BA-4000-9-6	4000	23983	-23.073	-18.380	4.865	0.934	1.412	0.997
BA-4000-9-7	4000	27973	-24.027	-19.748	5.928	1.242	1.451	0.996
BA-4000-9-8	4000	31964	-24.551	-20.678	6.824	1.528	1.494	0.995
BA-4500-10-1	4500	6234	-84.428	-76.837	4.451	1.510	1.371	1.004
BA-4500-10-2	4500	9515	-54.742	-48.368	5.004	1.435	1.407	1.000
BA-4500-10-3	4500	13624	-36.603	-31.536	4.633	1.146	1.390	0.997
BA-4500-10-4	4500	18022	-37.521	-32.185	5.931	1.460	1.465	0.999
BA-4500-10-5	4500	22498	-31.249	-26.880	5.974	1.436	1.456	0.996
BA-4500-10-6	4500	26985	-23.016	-18.106	4.725	0.867	1.405	0.998
BA-4500-10-7	4500	31475	-24.095	-19.567	5.805	1.154	1.450	0.996
BA-4500-10-8	4500	35965	-24.680	-20.629	6.708	1.456	1.486	0.995
BA-4500-10-9	4500	40455	-24.864	-21.159	7.366	1.656	1.516	0.996
BA-4500-2-1	4500	6205	-94.116	-85.504	4.415	1.488	1.370	1.005
BA-4500-3-1	4500	6198	-88.040	-80.075	4.448	1.504	1.366	1.003
BA-4500-3-2	4500	9441	-55.166	-48.777	4.929	1.418	1.401	0.999
BA-4500-4-1	4500	6219	-92.900	-83.884	4.400	1.468	1.372	1.005
BA-4500-4-2	4500	9477	-54.986	-48.578	4.929	1.410	1.403	0.999
BA-4500-4-3	4500	13598	-43.553	-37.879	5.485	1.429	1.439	0.999
BA-4500-5-1	4500	6147	-92.429	-83.882	4.375	1.474	1.370	1.005
BA-4500-5-2	4500	9457	-55.154	-48.640	4.898	1.389	1.406	0.999
BA-4500-5-3	4500	13610	-43.492	-37.763	5.500	1.431	1.442	0.999
BA-4500-5-4	4500	18010	-37.495	-32.144	5.923	1.455	1.465	0.999
BA-4500-6-1	4500	6177	-86.733	-78.786	4.486	1.532	1.366	1.003
BA-4500-6-2	4500	9514	-48.630	-42.927	4.526	1.271	1.376	0.998
BA-4500-6-3	4500	13622	-43.542	-37.834	5.500	1.444	1.437	0.999
BA-4500-6-4	4500	18003	-37.464	-32.161	5.915	1.460	1.461	0.998
BA-4500-6-5	4500	22489	-31.265	-26.928	5.976	1.448	1.453	0.997
BA-4500-7-1	4500	6234	-92.063	-83.448	4.417	1.496	1.373	1.004
BA-4500-7-2	4500	9428	-55.110	-48.716	4.931	1.402	1.406	0.999
BA-4500-7-3	4500	13610	-36.598	-31.520	4.586	1.142	1.385	0.997
BA-4500-7-4	4500	18018	-37.454	-32.130	5.937	1.460	1.464	0.998
BA-4500-7-5	4500	22486	-31.358	-27.037	5.964	1.441	1.453	0.997
BA-4500-7-6	4500	26980	-31.023	-26.455	6.636	1.497	1.506	0.999
BA-4500-8-1	4500	6096	-85.235	-77.540	4.463	1.538	1.363	1.003
BA-4500-8-2	4500	9487	-54.884	-48.451	4.965	1.418	1.408	1.000
BA-4500-8-3	4500	13606	-43.534	-37.828	5.490	1.424	1.442	0.999
BA-4500-8-4	4500	18017	-30.170	-25.285	4.652	1.043	1.391	0.997
BA-4500-8-5	4500	22489	-31.294	-26.937	5.958	1.441	1.452	0.997
BA-4500-8-6	4500	26980	-30.987	-26.455	6.634	1.498	1.505	0.999

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
BA-4500-8-7	4500	31472	-24.113	-19.611	5.809	1.157	1.450	0.996
BA-4500-9-1	4500	6216	-85.366	-77.705	4.405	1.474	1.372	1.003
BA-4500-9-2	4500	9466	-54.920	-48.549	4.972	1.417	1.407	1.000
BA-4500-9-3	4500	13605	-36.501	-31.419	4.596	1.119	1.391	0.997
BA-4500-9-4	4500	18021	-30.164	-25.216	4.632	1.038	1.392	0.997
BA-4500-9-5	4500	22493	-31.322	-26.989	5.971	1.447	1.453	0.997
BA-4500-9-6	4500	26985	-23.009	-18.136	4.704	0.867	1.404	0.998
BA-4500-9-7	4500	31473	-24.098	-19.589	5.802	1.158	1.447	0.996
BA-4500-9-8	4500	35964	-24.667	-20.645	6.738	1.471	1.486	0.995

Song, Havlin, and Makse networks

The Song, Havlin, and Makse (SHM) model generated 211 networks, as listed in Table S2. The parameters of the model were the number of generations (G), the initial nodes (M), the inner box connections rate (IB), the between-box connection rate (BB), and the mode (MODE), for which a value of 1 denotes assortativity and a value of 2 denotes hub repulsion. The network name is given following the pattern SHM_G-g M-m IB-*ib* BB-*bb* MODE-*bb*; for example, SHM_G-4 M-3 IB-0.40 BB-0.20 MODE-2 means that an iterative process was repeated four times (G-4), starting with 3 nodes (M-3). The nodes that belong to each box are connected with a ratio of 0.4 (IB-0.40) and the connection between boxes is 0.20 (BB-0.20), following a hub repulsion strategy.

Table S2. The $SBICR$, d_I , $d_{q,q'}$, q , and q' values for the information model Eq. (10) and the fractional (q , q') information model Eq. (12) on SHM networks.

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
SHM_G-2 M-2 IB-0.00 BB-0.00 MODE-1	14	13	-1.597	-1.575	1.589	1.501	1.167	0.890
SHM_G-2 M-2 IB-0.00 BB-0.00 MODE-2	10	9	5.505	5.206	1.158	1.052	1.184	0.928
SHM_G-2 M-2 IB-0.00 BB-0.20 MODE-1	18	25	8.671	10.959	2.545	2.290	1.233	0.864
SHM_G-2 M-2 IB-0.00 BB-0.20 MODE-2	14	18	4.048	2.984	1.866	1.633	1.222	0.906
SHM_G-2 M-2 IB-0.00 BB-0.40 MODE-1	18	31	-2.279	2.189	2.195	1.686	1.333	0.907
SHM_G-2 M-2 IB-0.00 BB-0.40 MODE-2	10	15	0.773	0.776	1.316	1.285	1.200	0.841
SHM_G-2 M-2 IB-0.00 BB-0.80 MODE-1	22	48	-2.576	-3.698	3.313	2.432	1.326	0.940
SHM_G-2 M-2 IB-0.00 BB-0.80 MODE-2	16	28	3.618	3.039	2.173	1.874	1.280	0.860
SHM_G-2 M-2 IB-0.00 BB-1.00 MODE-1	22	53	1.220	-0.913	2.609	1.859	1.412	0.882
SHM_G-2 M-2 IB-0.00 BB-1.00 MODE-2	18	31	-2.727	-1.025	2.215	1.760	1.270	0.927
SHM_G-2 M-2 IB-0.40 BB-0.00 MODE-1	14	13	-1.597	-1.575	1.589	1.501	1.167	0.890
SHM_G-2 M-2 IB-0.40 BB-0.00 MODE-2	10	9	5.505	5.206	1.158	1.052	1.184	0.928
SHM_G-2 M-2 IB-0.40 BB-0.20 MODE-1	18	29	-2.563	-1.389	1.657	1.328	1.333	0.859
SHM_G-2 M-2 IB-0.40 BB-0.20 MODE-2	10	13	-2.008	-1.926	1.440	1.302	1.231	0.899
SHM_G-2 M-2 IB-0.40 BB-0.40 MODE-1	18	35	0.587	-0.465	2.465	1.864	1.360	0.903
SHM_G-2 M-2 IB-0.40 BB-0.40 MODE-2	12	19	-2.076	-1.933	1.504	1.354	1.244	0.866

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-2 M-2 IB-0.40 BB-0.80 MODE-1	22	58	-4.000	-4.538	2.962	1.964	1.463	0.938
SHM_G-2 M-2 IB-0.40 BB-0.80 MODE-2	16	36	-3.956	-3.856	2.312	1.748	1.385	0.931
SHM_G-2 M-2 IB-0.40 BB-1.00 MODE-1	22	65	-2.360	-3.163	2.598	1.744	1.463	0.911
SHM_G-2 M-2 IB-1.00 BB-0.00 MODE-1	22	47	-5.583	-3.471	1.342	0.746	1.762	0.842
SHM_G-2 M-2 IB-1.00 BB-0.00 MODE-2	14	27	-5.489	-4.773	0.938	0.705	1.500	0.868
SHM_G-2 M-2 IB-1.00 BB-0.20 MODE-1	26	77	-4.987	-3.667	1.589	0.762	1.950	0.842
SHM_G-2 M-2 IB-1.00 BB-0.20 MODE-2	18	54	-5.312	-4.344	0.831	0.521	1.740	0.853
SHM_G-2 M-2 IB-1.00 BB-0.40 MODE-1	26	83	-4.623	-3.490	1.670	0.804	1.950	0.856
SHM_G-2 M-2 IB-1.00 BB-0.40 MODE-2	14	33	-5.489	-4.773	0.938	0.705	1.500	0.868
SHM_G-2 M-3 IB-0.00 BB-0.00 MODE-1	51	50	-13.464	-13.000	2.812	2.127	1.245	0.922
SHM_G-2 M-3 IB-0.00 BB-0.00 MODE-2	39	38	-20.097	-19.232	1.770	1.382	1.255	0.917
SHM_G-2 M-3 IB-0.00 BB-0.20 MODE-1	63	106	-14.796	-14.976	3.075	1.806	1.377	0.950
SHM_G-2 M-3 IB-0.00 BB-0.20 MODE-2	42	65	-3.228	-3.006	2.356	1.631	1.354	0.891
SHM_G-2 M-3 IB-0.00 BB-0.40 MODE-1	69	155	-9.246	-10.267	3.411	1.979	1.353	0.954
SHM_G-2 M-3 IB-0.00 BB-0.40 MODE-2	51	98	-12.403	-13.260	2.864	1.708	1.378	0.962
SHM_G-2 M-3 IB-0.00 BB-0.80 MODE-1	81	253	-6.428	-9.586	3.895	1.739	1.548	0.963
SHM_G-2 M-3 IB-0.00 BB-0.80 MODE-2	57	150	2.978	-6.159	3.342	2.004	1.383	0.932
SHM_G-2 M-3 IB-0.00 BB-1.00 MODE-1	87	302	-2.905	-4.937	4.005	2.031	1.412	0.931
SHM_G-2 M-3 IB-0.00 BB-1.00 MODE-2	57	173	-1.383	-7.276	3.413	1.957	1.396	0.956
SHM_G-2 M-3 IB-0.40 BB-0.00 MODE-1	99	227	-3.726	-11.737	3.122	1.322	1.630	0.918
SHM_G-2 M-3 IB-0.40 BB-0.00 MODE-2	69	150	-21.307	-20.474	2.010	1.004	1.547	0.944
SHM_G-2 M-3 IB-0.40 BB-0.20 MODE-1	111	313	-9.822	-10.872	3.313	1.163	1.676	0.932
SHM_G-2 M-3 IB-0.40 BB-0.20 MODE-2	87	257	-18.304	-18.476	2.700	1.081	1.680	0.961
SHM_G-2 M-3 IB-0.40 BB-0.40 MODE-1	117	386	-11.882	-12.436	3.537	1.202	1.702	0.948
SHM_G-2 M-3 IB-0.40 BB-0.40 MODE-2	90	300	-11.566	-10.903	2.824	1.098	1.600	0.948
SHM_G-2 M-3 IB-0.40 BB-0.80 MODE-1	129	520	-13.198	-13.534	3.873	1.268	1.737	0.963
SHM_G-2 M-3 IB-0.40 BB-0.80 MODE-2	90	368	-13.109	-12.764	3.371	1.260	1.731	0.942
SHM_G-2 M-3 IB-0.40 BB-1.00 MODE-1	135	590	-12.696	-13.746	4.253	1.314	1.800	0.970
SHM_G-2 M-3 IB-0.40 BB-1.00 MODE-2	102	413	-14.611	-13.941	3.730	1.364	1.707	0.967
SHM_G-2 M-3 IB-1.00 BB-0.00 MODE-1	177	1331	-19.647	-8.442	2.172	0.173	4.246	0.922
SHM_G-2 M-3 IB-1.00 BB-0.00 MODE-2	141	1082	-19.278	-10.168	1.930	0.212	3.884	0.931
SHM_G-2 M-3 IB-1.00 BB-0.20 MODE-1	189	1534	-15.465	-7.635	2.386	0.183	4.505	0.906
SHM_G-2 M-3 IB-1.00 BB-0.20 MODE-2	135	1092	-15.150	-7.148	1.925	0.209	3.905	0.898

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-2 M-3 IB-1.00 BB-0.40 MODE-1	195	1670	-12.289	-4.120	2.447	0.149	4.394	0.921
SHM_G-2 M-3 IB-1.00 BB-0.40 MODE-2	132	1108	-11.148	-3.435	1.625	0.127	3.792	0.897
SHM_G-2 M-3 IB-1.00 BB-0.80 MODE-1	207	1942	-12.008	-4.016	2.584	0.152	4.760	0.927
SHM_G-2 M-3 IB-1.00 BB-0.80 MODE-2	141	1237	-11.829	-5.104	2.274	0.235	4.150	0.898
SHM_G-2 M-3 IB-1.00 BB-1.00 MODE-1	213	2114	-12.880	-5.655	3.020	0.243	4.880	0.926
SHM_G-2 M-3 IB-1.00 BB-1.00 MODE-2	147	1432	-12.178	-5.987	2.502	0.313	4.300	0.934
SHM_G-2 M-4 IB-0.00 BB-0.00 MODE-1	124	123	-17.719	-16.546	3.457	2.170	1.279	0.939
SHM_G-2 M-4 IB-0.00 BB-0.00 MODE-2	104	103	-31.858	-29.884	2.383	1.583	1.290	0.929
SHM_G-2 M-4 IB-0.00 BB-0.20 MODE-1	148	302	-18.442	-18.000	3.922	1.804	1.429	0.975
SHM_G-2 M-4 IB-0.00 BB-0.20 MODE-2	116	212	-22.970	-23.005	2.913	1.392	1.447	0.969
SHM_G-2 M-4 IB-0.00 BB-0.40 MODE-1	164	459	-13.460	-13.322	3.987	1.711	1.425	0.968
SHM_G-2 M-4 IB-0.00 BB-0.40 MODE-2	136	346	-14.376	-16.044	3.760	1.653	1.467	0.976
SHM_G-2 M-4 IB-0.00 BB-0.80 MODE-1	204	777	-13.740	-14.440	4.838	1.772	1.543	0.980
SHM_G-2 M-4 IB-0.00 BB-0.80 MODE-2	164	549	-15.531	-16.922	4.068	1.513	1.575	0.985
SHM_G-2 M-4 IB-0.00 BB-1.00 MODE-1	220	933	-13.843	-14.731	4.956	1.608	1.623	0.983
SHM_G-2 M-4 IB-0.00 BB-1.00 MODE-2	176	700	-11.190	-13.659	4.619	1.745	1.534	0.979
SHM_G-2 M-4 IB-0.40 BB-0.00 MODE-1	316	1338	-16.874	-13.680	3.661	0.925	1.841	0.969
SHM_G-2 M-4 IB-0.40 BB-0.00 MODE-2	284	1222	-32.598	-29.478	2.722	0.656	1.956	0.974
SHM_G-2 M-4 IB-0.40 BB-0.20 MODE-1	404	2025	-21.120	-18.275	4.348	0.832	2.092	0.966
SHM_G-2 M-4 IB-0.40 BB-0.20 MODE-2	316	1605	-26.783	-23.228	3.549	0.768	2.015	0.986
SHM_G-2 M-4 IB-0.40 BB-0.40 MODE-1	356	1818	-15.659	-14.719	4.185	0.933	1.906	0.975
SHM_G-2 M-4 IB-0.40 BB-0.40 MODE-2	308	1638	-21.892	-18.998	3.887	0.847	1.954	0.980
SHM_G-2 M-4 IB-0.40 BB-0.80 MODE-1	396	2489	-14.009	-13.785	4.825	0.948	2.121	0.985
SHM_G-2 M-4 IB-0.40 BB-0.80 MODE-2	324	1840	-17.707	-15.340	4.394	0.896	1.972	0.974
SHM_G-2 M-4 IB-0.40 BB-1.00 MODE-1	412	2476	-15.337	-14.688	4.730	0.901	2.093	0.983
SHM_G-2 M-4 IB-0.40 BB-1.00 MODE-2	376	2454	-17.972	-15.911	4.858	0.918	2.063	0.981
SHM_G-2 M-4 IB-1.00 BB-0.00 MODE-1	796	15855	-22.881	-0.380	2.721	0.028	9.609	0.966
SHM_G-2 M-4 IB-1.00 BB-0.00 MODE-2	604	11964	-26.024	-1.853	2.133	0.032	8.441	0.978
SHM_G-2 M-4 IB-1.00 BB-0.20 MODE-1	820	16838	-18.060	-0.777	2.690	0.034	9.087	0.923
SHM_G-2 M-4 IB-1.00 BB-0.20 MODE-2	616	12411	-17.583	-1.066	2.450	0.035	8.428	0.925
SHM_G-2 M-4 IB-1.00 BB-0.40 MODE-1	836	17298	-18.838	-6.289	3.319	0.080	9.524	0.947
SHM_G-2 M-4 IB-1.00 BB-0.40 MODE-2	728	15353	-18.463	-4.710	2.950	0.062	9.503	0.934
SHM_G-2 M-4 IB-1.00 BB-0.80 MODE-1	868	18663	-14.177	-0.687	3.168	0.034	9.590	0.929

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-2 M-4 IB-1.00 BB-0.80 MODE-2	656	13870	-13.584	-0.707	2.601	0.034	8.987	0.911
SHM_G-2 M-4 IB-1.00 BB-1.00 MODE-1	884	19238	-14.353	-0.990	3.391	0.038	9.755	0.938
SHM_G-2 M-4 IB-1.00 BB-1.00 MODE-2	680	14379	-13.723	-0.595	2.762	0.034	9.294	0.917
SHM_G-3 M-2 IB-0.00 BB-0.00 MODE-1	30	29	-10.262	-10.078	1.791	1.515	1.197	0.915
SHM_G-3 M-2 IB-0.00 BB-0.00 MODE-2	14	13	-0.428	-0.128	1.239	1.061	1.214	0.943
SHM_G-3 M-2 IB-0.00 BB-0.20 MODE-1	64	133	-8.315	-8.489	3.005	1.789	1.354	0.930
SHM_G-3 M-2 IB-0.00 BB-0.20 MODE-2	28	47	-6.335	-6.568	2.592	2.032	1.219	0.956
SHM_G-3 M-2 IB-0.00 BB-0.40 MODE-1	82	218	-7.040	-10.462	3.616	1.822	1.435	0.954
SHM_G-3 M-2 IB-0.00 BB-0.40 MODE-2	24	52	-6.229	-6.154	2.542	1.967	1.284	0.925
SHM_G-3 M-2 IB-0.00 BB-0.80 MODE-1	134	530	-9.249	-12.777	4.581	1.804	1.558	0.978
SHM_G-3 M-2 IB-0.00 BB-0.80 MODE-2	30	86	-2.597	-3.916	2.660	1.861	1.356	0.916
SHM_G-3 M-2 IB-0.00 BB-1.00 MODE-1	136	629	-7.840	-8.321	4.858	2.100	1.456	0.955
SHM_G-3 M-2 IB-0.00 BB-1.00 MODE-2	32	100	-0.892	-1.156	2.829	2.186	1.260	0.907
SHM_G-3 M-2 IB-0.40 BB-0.00 MODE-1	30	29	-10.262	-10.078	1.791	1.515	1.197	0.915
SHM_G-3 M-2 IB-0.40 BB-0.00 MODE-2	14	13	-0.403	-0.102	1.239	1.061	1.214	0.942
SHM_G-3 M-2 IB-0.40 BB-0.20 MODE-1	72	189	-9.463	-9.781	2.869	1.328	1.520	0.932
SHM_G-3 M-2 IB-0.40 BB-0.20 MODE-2	22	40	-8.184	-7.984	1.780	1.384	1.301	0.919
SHM_G-3 M-2 IB-0.40 BB-0.40 MODE-1	84	294	-12.671	-12.739	3.618	1.562	1.596	0.956
SHM_G-3 M-2 IB-0.40 BB-0.40 MODE-2	18	42	-2.854	-2.680	1.940	1.656	1.233	0.902
SHM_G-3 M-2 IB-0.40 BB-0.80 MODE-1	160	801	-7.782	-7.840	4.148	1.258	1.596	0.962
SHM_G-3 M-2 IB-0.40 BB-0.80 MODE-2	22	70	-5.822	-6.102	2.350	1.679	1.364	0.942
SHM_G-3 M-2 IB-0.40 BB-1.00 MODE-1	168	932	-9.361	-8.930	4.664	1.375	1.679	0.961
SHM_G-3 M-2 IB-0.40 BB-1.00 MODE-2	20	70	-3.976	-3.595	2.144	1.674	1.341	0.879
SHM_G-3 M-2 IB-1.00 BB-0.00 MODE-1	150	623	-21.478	-10.593	2.120	0.288	2.928	0.868
SHM_G-3 M-2 IB-1.00 BB-0.00 MODE-2	46	173	-16.956	-10.073	1.291	0.456	2.160	0.873
SHM_G-3 M-2 IB-1.00 BB-0.20 MODE-1	250	1635	-16.598	-7.279	2.490	0.153	3.552	0.931
SHM_G-3 M-2 IB-1.00 BB-0.20 MODE-2	78	463	-14.729	-10.147	1.935	0.442	2.957	0.912
SHM_G-3 M-2 IB-1.00 BB-0.40 MODE-1	278	2097	-18.143	-11.162	3.360	0.297	4.176	0.944
SHM_G-3 M-2 IB-1.00 BB-0.40 MODE-2	80	506	-10.823	-5.376	1.740	0.283	3.030	0.853
SHM_G-3 M-2 IB-1.00 BB-0.80 MODE-1	398	4030	-13.741	-3.722	3.107	0.102	4.728	0.943
SHM_G-3 M-2 IB-1.00 BB-0.80 MODE-2	114	876	-11.883	-5.759	2.127	0.282	3.475	0.877
SHM_G-3 M-2 IB-1.00 BB-1.00 MODE-1	406	4221	-14.076	-4.781	3.515	0.143	4.884	0.939
SHM_G-3 M-2 IB-1.00 BB-1.00 MODE-2	134	1202	-12.378	-6.063	2.360	0.304	3.975	0.915

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-3 M-3 IB-0.00 BB-0.00 MODE-1	159	158	-26.660	-25.509	3.013	1.808	1.294	0.941
SHM_G-3 M-3 IB-0.00 BB-0.00 MODE-2	87	86	-35.437	-34.104	2.116	1.500	1.249	0.941
SHM_G-3 M-3 IB-0.00 BB-0.20 MODE-1	378	1203	-20.969	-20.473	4.760	1.526	1.550	0.989
SHM_G-3 M-3 IB-0.00 BB-0.20 MODE-2	192	458	-19.186	-21.131	3.745	1.535	1.477	0.985
SHM_G-3 M-3 IB-0.00 BB-0.40 MODE-1	636	2599	-16.606	-15.900	5.309	1.382	1.557	0.986
SHM_G-3 M-3 IB-0.00 BB-0.40 MODE-2	267	720	-17.615	-18.219	4.208	1.535	1.496	0.979
SHM_G-3 M-3 IB-0.00 BB-0.80 MODE-1	1050	6406	-16.079	-16.859	6.633	1.461	1.693	0.994
SHM_G-3 M-3 IB-0.00 BB-0.80 MODE-2	417	1904	-17.120	-17.295	5.030	1.432	1.644	0.994
SHM_G-3 M-3 IB-0.00 BB-1.00 MODE-1	1266	8963	-13.286	-16.832	7.020	1.392	1.751	0.994
SHM_G-3 M-3 IB-0.00 BB-1.00 MODE-2	477	2090	-17.628	-18.779	5.062	1.365	1.673	0.992
SHM_G-3 M-3 IB-0.40 BB-0.00 MODE-1	1035	3404	-27.170	-26.584	4.182	0.738	2.012	0.942
SHM_G-3 M-3 IB-0.40 BB-0.00 MODE-2	549	2018	-38.953	-34.170	3.054	0.641	1.860	0.978
SHM_G-3 M-3 IB-0.40 BB-0.20 MODE-1	1590	9064	-25.634	-22.107	5.519	0.704	2.098	0.988
SHM_G-3 M-3 IB-0.40 BB-0.20 MODE-2	873	4561	-26.431	-20.990	4.040	0.560	1.994	0.987
SHM_G-3 M-3 IB-0.40 BB-0.40 MODE-1	1929	14364	-21.104	-17.346	6.310	0.780	2.068	0.991
SHM_G-3 M-3 IB-0.40 BB-0.40 MODE-2	705	3934	-19.604	-15.576	4.459	0.660	1.896	0.986
SHM_G-3 M-3 IB-0.40 BB-0.80 MODE-1	2562	26884	-6.882	-8.215	6.186	0.369	1.999	0.994
SHM_G-3 M-3 IB-0.40 BB-0.80 MODE-2	1032	8016	-20.570	-17.223	5.849	0.846	2.098	0.992
SHM_G-3 M-3 IB-0.40 BB-1.00 MODE-1	2973	35526	-9.367	-9.681	7.140	0.522	2.045	0.994
SHM_G-3 M-3 IB-0.40 BB-1.00 MODE-2	1185	10264	-9.482	-5.483	4.737	0.263	1.971	0.989
SHM_G-3 M-3 IB-1.00 BB-0.00 MODE-1	7467	182123	-36.522	-1.394	3.937	0.017	16.103	0.960
SHM_G-3 M-3 IB-1.00 BB-0.00 MODE-2	3255	79322	-37.764	-4.976	2.921	0.022	14.022	0.952
SHM_G-3 M-3 IB-1.00 BB-0.20 MODE-1	8763	239323	-22.249	2.112	4.560	0.010	15.310	0.971
SHM_G-3 M-3 IB-1.00 BB-0.20 MODE-2	3711	92591	-20.736	0.296	3.468	0.018	13.691	0.945
SHM_G-3 M-3 IB-1.00 BB-0.40 MODE-1	9435	271289	-23.283	-8.093	5.662	0.062	16.238	0.986
SHM_G-3 M-3 IB-1.00 BB-0.40 MODE-2	4311	121645	-22.015	-5.009	4.530	0.039	15.333	0.965
SHM_G-3 M-3 IB-1.00 BB-0.80 MODE-1	10707	338945	-16.706	2.183	4.072	0.007	15.789	0.976
SHM_G-3 M-3 IB-1.00 BB-0.80 MODE-2	4569	138067	-15.464	1.862	3.105	0.009	14.734	0.963
SHM_G-3 M-3 IB-1.00 BB-1.00 MODE-1	11409	378119	-16.744	2.508	4.314	0.007	16.302	0.977
SHM_G-3 M-3 IB-1.00 BB-1.00 MODE-2	4905	147296	-15.848	0.978	3.623	0.013	15.172	0.956
SHM_G-3 M-4 IB-0.00 BB-0.00 MODE-1	508	507	-32.227	-29.746	3.685	1.629	1.351	0.954
SHM_G-3 M-4 IB-0.00 BB-0.00 MODE-2	316	315	-47.119	-43.609	2.635	1.355	1.304	0.961
SHM_G-3 M-4 IB-0.00 BB-0.20 MODE-1	1676	6182	-25.878	-23.159	5.778	1.215	1.651	0.994

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-3 M-4 IB-0.00 BB-0.20 MODE-2	840	2568	-26.670	-25.645	5.031	1.458	1.550	0.998
SHM_G-3 M-4 IB-0.00 BB-0.40 MODE-1	2688	13441	-20.001	-17.641	6.452	1.035	1.668	0.995
SHM_G-3 M-4 IB-0.00 BB-0.40 MODE-2	1464	5623	-20.997	-21.235	5.693	1.317	1.611	0.996
SHM_G-3 M-4 IB-0.00 BB-0.80 MODE-1	4916	37961	-18.583	-18.238	8.134	1.203	1.797	0.997
SHM_G-3 M-4 IB-0.00 BB-0.80 MODE-2	2400	15303	-22.209	-21.077	6.647	1.229	1.786	0.999
SHM_G-3 M-4 IB-0.00 BB-1.00 MODE-1	6020	53933	-15.803	-17.849	8.659	1.281	1.810	0.998
SHM_G-3 M-4 IB-0.00 BB-1.00 MODE-2	2904	19528	-23.325	-21.385	6.837	1.176	1.831	1.000
SHM_G-3 M-4 IB-0.40 BB-0.00 MODE-1	9460	114060	-35.463	-28.163	5.281	0.530	2.439	0.997
SHM_G-3 M-4 IB-0.40 BB-0.00 MODE-2	5964	50160	-62.531	-47.240	4.340	0.363	2.676	1.010
SHM_G-3 M-4 IB-0.40 BB-0.20 MODE-1	13576	148617	-22.204	-10.253	6.248	0.111	2.455	0.990
SHM_G-3 M-4 IB-0.40 BB-0.20 MODE-2	7164	71415	-31.266	-23.016	5.777	0.434	2.457	0.997
SHM_G-3 M-4 IB-0.40 BB-0.40 MODE-1	12708	199352	-18.152	-12.742	6.689	0.221	2.608	0.989
SHM_G-3 M-4 IB-0.40 BB-0.40 MODE-2	8848	107517	-23.527	-12.706	5.658	0.158	2.439	0.994
SHM_G-3 M-4 IB-0.40 BB-0.80 MODE-1	19968	374394	-13.793	-6.754	7.340	0.131	2.361	0.998
SHM_G-3 M-4 IB-0.40 BB-0.80 MODE-2	11512	182388	-25.407	-18.201	7.742	0.564	2.569	0.998
SHM_G-3 M-4 IB-0.40 BB-1.00 MODE-1	21908	466164	-13.293	-7.996	8.344	0.195	2.400	0.998
SHM_G-3 M-4 IB-0.40 BB-1.00 MODE-2	10464	170432	-14.850	0.900	4.829	0.026	2.315	0.998
SHM_G-4 M-2 IB-0.00 BB-0.00 MODE-1	62	61	-21.522	-20.904	1.996	1.519	1.217	0.930
SHM_G-4 M-2 IB-0.00 BB-0.00 MODE-2	18	17	-5.500	-4.768	1.269	1.045	1.229	0.949
SHM_G-4 M-2 IB-0.00 BB-0.20 MODE-1	298	1075	-15.932	-15.430	4.637	1.658	1.461	0.981
SHM_G-4 M-2 IB-0.00 BB-0.20 MODE-2	32	62	-6.427	-6.590	2.764	2.131	1.261	0.920
SHM_G-4 M-2 IB-0.00 BB-0.40 MODE-1	488	2556	-16.217	-16.317	5.760	1.686	1.577	0.990
SHM_G-4 M-2 IB-0.00 BB-0.40 MODE-2	48	123	-7.726	-10.548	2.828	1.712	1.387	0.948
SHM_G-4 M-2 IB-0.00 BB-0.80 MODE-1	1286	11988	-13.121	-12.250	7.853	1.737	1.584	0.993
SHM_G-4 M-2 IB-0.00 BB-0.80 MODE-2	104	396	-9.354	-11.384	4.217	1.969	1.471	0.965
SHM_G-4 M-2 IB-0.00 BB-1.00 MODE-1	1638	22153	-14.458	-13.063	9.000	1.922	1.654	0.994
SHM_G-4 M-2 IB-0.00 BB-1.00 MODE-2	150	746	-12.866	-12.952	4.739	1.851	1.542	0.985
SHM_G-4 M-2 IB-0.40 BB-0.00 MODE-1	62	61	-21.522	-20.904	1.996	1.519	1.217	0.930
SHM_G-4 M-2 IB-0.40 BB-0.00 MODE-2	18	17	-5.500	-4.768	1.269	1.045	1.229	0.949
SHM_G-4 M-2 IB-0.40 BB-0.20 MODE-1	414	1897	-18.143	-16.115	4.719	1.161	1.673	0.979
SHM_G-4 M-2 IB-0.40 BB-0.20 MODE-2	28	63	-6.741	-6.139	2.222	1.631	1.333	0.901
SHM_G-4 M-2 IB-0.40 BB-0.40 MODE-1	808	5518	-18.681	-17.009	6.079	1.136	1.873	0.993
SHM_G-4 M-2 IB-0.40 BB-0.40 MODE-2	84	288	-13.284	-14.441	3.335	1.322	1.678	0.973

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
SHM_G-4 M-2 IB-0.40 BB-0.80 MODE-1	2402	30228	-14.148	-11.310	7.937	0.884	1.929	0.993
SHM_G-4 M-2 IB-0.40 BB-0.80 MODE-2	112	538	-12.963	-13.039	4.011	1.398	1.728	0.980
SHM_G-4 M-2 IB-0.40 BB-1.00 MODE-1	2526	35203	-15.241	-12.229	8.738	1.108	1.978	0.994
SHM_G-4 M-2 IB-0.40 BB-1.00 MODE-2	260	1525	-8.402	-8.126	4.444	0.936	1.735	0.971
SHM_G-4 M-2 IB-1.00 BB-0.00 MODE-1	2198	18031	-38.351	-10.273	3.250	0.098	6.083	0.891
SHM_G-4 M-2 IB-1.00 BB-0.00 MODE-2	302	2374	-30.929	-9.622	1.852	0.119	4.214	0.879
SHM_G-4 M-2 IB-1.00 BB-0.20 MODE-1	5622	83811	-23.701	-10.429	5.575	0.105	7.974	0.988
SHM_G-4 M-2 IB-1.00 BB-0.20 MODE-2	704	8327	-18.855	-2.738	2.779	0.048	6.196	0.932
SHM_G-4 M-2 IB-1.00 BB-0.40 MODE-1	7024	130920	-16.301	1.951	3.647	0.008	8.292	0.985
SHM_G-4 M-2 IB-1.00 BB-0.40 MODE-2	1010	13694	-20.865	-10.107	3.844	0.146	7.025	0.970
SHM_G-4 M-2 IB-1.00 BB-0.80 MODE-1	13298	368306	-17.698	3.145	5.812	0.005	10.778	0.993
SHM_G-4 M-2 IB-1.00 BB-0.80 MODE-2	2380	46128	-15.362	0.229	3.294	0.018	9.258	0.960
SHM_G-4 M-2 IB-1.00 BB-1.00 MODE-1	16548	527902	-17.969	1.640	6.732	0.009	12.227	0.993
SHM_G-4 M-2 IB-1.00 BB-1.00 MODE-2	1422	24435	-15.133	-1.097	3.416	0.031	8.024	0.945
SHM_G-4 M-3 IB-0.00 BB-0.00 MODE-1	483	482	-41.155	-38.640	3.237	1.523	1.336	0.952
SHM_G-4 M-3 IB-0.00 BB-0.00 MODE-2	183	182	-50.293	-47.954	2.331	1.427	1.253	0.969
SHM_G-4 M-3 IB-0.00 BB-0.20 MODE-1	4947	39969	-21.665	-19.155	7.693	1.228	1.705	0.997
SHM_G-4 M-3 IB-0.00 BB-0.20 MODE-2	819	3264	-22.837	-21.373	5.453	1.619	1.523	0.996
SHM_G-4 M-3 IB-0.00 BB-0.40 MODE-1	10794	178909	-16.087	-17.580	9.519	1.277	1.854	0.999
SHM_G-4 M-3 IB-0.00 BB-0.40 MODE-2	1671	12011	-23.832	-21.741	6.529	1.366	1.726	1.001
SHM_G-4 M-3 IB-0.00 BB-0.80 MODE-1	28869	880475	-14.511	-14.030	12.68 9	1.527	1.742	0.999
SHM_G-4 M-3 IB-0.00 BB-0.80 MODE-2	5550	80645	-13.018	-17.345	8.749	1.420	1.759	0.999
SHM_G-4 M-3 IB-0.00 BB-1.00 MODE-2	5691	99784	-18.053	-16.811	8.895	1.320	1.847	0.999
SHM_G-4 M-3 IB-0.40 BB-0.00 MODE-1	4677	21449	-39.283	-38.038	4.533	0.610	2.056	0.997
SHM_G-4 M-3 IB-0.40 BB-0.00 MODE-2	5859	29366	-77.174	-63.212	4.047	0.429	2.292	1.006
SHM_G-4 M-3 IB-0.40 BB-0.20 MODE-2	10287	102665	-31.172	-22.943	6.943	0.526	2.380	0.998
SHM_G-4 M-3 IB-0.40 BB-0.40 MODE-1	36480	806723	-21.619	-17.559	9.263	0.554	2.665	0.999
SHM_G-4 M-3 IB-0.40 BB-0.40 MODE-2	16587	247921	-26.382	-18.996	8.046	0.633	2.393	0.999
SHM_G-4 M-3 IB-0.40 BB-0.80 MODE-2	27234	639037	-11.567	-2.599	6.438	0.036	2.269	0.999
SHM_G-4 M-4 IB-0.00 BB-0.00 MODE-1	2044	2043	-47.290	-42.607	4.006	1.249	1.409	0.963

Watts and Strogatz networks

Watts and Strogatz model generated 216 networks, as listed in Table S3. The parameters of the model were the number of nodes of the resulting network (n), average node degree (ad), and the rewiring probability (β). The network name is given following the pattern WS- n - k - β ; for example, WS-2000-2-0.2 describes a network with 2000 nodes with average degree 4 ($2*ad$) and $\beta = 0.2$.

Table S3. The SBICR, d_I , $d_{q,q'}$, q , and q' values for the information model Eq. (10) and the fractional (q, q') information model Eq. (12) on WS networks.

Network	Nodes	Edges	$SBICR_I$	$SBICR_{(q,q')}$	d_I	$d_{q,q'}$	q	q'
WS-2000-10-0.000000	2000	20000	-274.952	-93.644	1.009	0.088	2.834	0.914
WS-2000-10-0.200000	2000	20000	-23.228	-15.180	5.444	0.359	3.024	0.987
WS-2000-10-0.400000	2000	20000	-7.380	3.501	3.676	0.040	2.233	0.991
WS-2000-10-0.600000	2000	20000	-13.545	-5.790	4.802	0.189	1.840	0.988
WS-2000-10-0.800000	2000	20000	-14.677	-9.310	5.553	0.586	1.575	0.985
WS-2000-10-1.000000	2000	20000	-14.688	-9.986	5.721	0.766	1.507	0.985
WS-2000-2-0.000000	2000	4000	-704.019	-541.934	0.958	0.620	1.305	0.915
WS-2000-2-0.200000	2000	4000	-76.308	-65.854	3.428	0.768	1.599	0.996
WS-2000-2-0.400000	2000	4000	-65.271	-56.981	4.022	1.005	1.523	1.004
WS-2000-2-0.600000	2000	4000	-53.653	-47.343	3.855	1.040	1.451	0.995
WS-2000-2-0.800000	2000	4000	-46.389	-40.635	3.405	0.872	1.409	0.993
WS-2000-2-1.000000	2000	4000	-46.604	-41.103	3.482	0.924	1.403	0.993
WS-2000-3-0.000000	2000	6000	-631.257	-518.323	0.967	0.458	1.475	0.915
WS-2000-3-0.200000	2000	6000	-53.661	-43.937	3.964	0.616	1.868	0.996
WS-2000-3-0.400000	2000	6000	-42.082	-35.315	4.355	0.822	1.657	0.993
WS-2000-3-0.600000	2000	6000	-36.016	-31.059	4.194	0.944	1.504	0.992
WS-2000-3-0.800000	2000	6000	-36.131	-31.631	4.438	1.096	1.473	0.993
WS-2000-3-1.000000	2000	6000	-36.049	-31.680	4.477	1.137	1.458	0.994
WS-2000-4-0.000000	2000	8000	-539.347	-429.480	0.975	0.343	1.652	0.915
WS-2000-4-0.200000	2000	8000	-41.750	-32.582	4.187	0.504	2.062	0.992
WS-2000-4-0.400000	2000	8000	-28.397	-20.063	3.705	0.352	1.739	0.988
WS-2000-4-0.600000	2000	8000	-30.082	-25.160	4.736	0.947	1.575	0.990
WS-2000-4-0.800000	2000	8000	-30.421	-26.317	5.057	1.224	1.506	0.993
WS-2000-4-1.000000	2000	8000	-30.277	-26.269	5.063	1.254	1.491	0.992
WS-2000-5-0.000000	2000	10000	-469.027	-345.023	0.982	0.262	1.837	0.915
WS-2000-5-0.200000	2000	10000	-35.685	-27.555	4.314	0.425	2.272	0.991
WS-2000-5-0.400000	2000	10000	-30.234	-24.295	4.994	0.680	1.954	0.994
WS-2000-5-0.600000	2000	10000	-20.764	-13.312	3.778	0.329	1.593	0.991
WS-2000-5-0.800000	2000	10000	-21.823	-16.052	4.236	0.633	1.485	0.989
WS-2000-5-1.000000	2000	10000	-22.000	-16.586	4.313	0.722	1.459	0.989
WS-2000-6-0.000000	2000	12000	-411.972	-278.204	0.988	0.204	2.026	0.915
WS-2000-6-0.200000	2000	12000	-29.438	-20.383	4.220	0.316	2.388	0.986
WS-2000-6-0.400000	2000	12000	-21.041	-11.308	4.089	0.181	1.967	0.986
WS-2000-6-0.600000	2000	12000	-23.293	-18.010	5.462	0.830	1.680	0.984
WS-2000-6-0.800000	2000	12000	-23.887	-19.790	5.895	1.305	1.555	0.984
WS-2000-6-1.000000	2000	12000	-23.898	-20.104	5.986	1.429	1.520	0.987
WS-2000-7-0.000000	2000	14000	-367.800	-217.492	0.992	0.160	2.223	0.915
WS-2000-7-0.200000	2000	14000	-29.618	-21.756	4.775	0.401	2.659	0.993

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
WS-2000-7-0.400000	2000	14000	-23.079	-16.020	5.335	0.480	2.106	0.980
WS-2000-7-0.600000	2000	14000	-24.196	-19.863	6.406	1.173	1.761	0.991
WS-2000-7-0.800000	2000	14000	-24.204	-20.537	6.613	1.440	1.619	0.996
WS-2000-7-1.000000	2000	14000	-24.092	-20.690	6.685	1.543	1.577	0.996
WS-2000-8-0.000000	2000	16000	-330.431	-168.027	0.998	0.129	2.423	0.914
WS-2000-8-0.200000	2000	16000	-20.374	-6.658	3.812	0.069	2.640	0.983
WS-2000-8-0.400000	2000	16000	-23.876	-18.173	6.132	0.728	2.227	0.993
WS-2000-8-0.600000	2000	16000	-10.458	-3.415	3.443	0.126	1.677	0.994
WS-2000-8-0.800000	2000	16000	-11.673	-6.146	3.839	0.322	1.492	0.994
WS-2000-8-1.000000	2000	16000	-11.228	-6.483	3.992	0.410	1.449	0.994
WS-2000-9-0.000000	2000	18000	-303.146	-137.515	1.004	0.108	2.626	0.913
WS-2000-9-0.200000	2000	18000	-22.234	-11.441	4.661	0.170	2.843	0.977
WS-2000-9-0.400000	2000	18000	-23.616	-17.842	6.203	0.669	2.353	0.995
WS-2000-9-0.600000	2000	18000	-12.179	-4.366	4.020	0.136	1.767	0.992
WS-2000-9-0.800000	2000	18000	-13.432	-7.763	4.664	0.409	1.539	0.991
WS-2000-9-1.000000	2000	18000	-13.375	-8.370	4.798	0.536	1.480	0.991
WS-3000-10-0.000000	3000	30000	-408.918	-165.507	0.994	0.095	2.723	0.914
WS-3000-10-0.200000	3000	30000	-22.849	-10.770	4.910	0.135	2.977	0.980
WS-3000-10-0.400000	3000	30000	-10.813	10.384	3.352	0.021	2.212	0.995
WS-3000-10-0.600000	3000	30000	-11.054	-2.406	3.917	0.076	1.814	0.995
WS-3000-10-0.800000	3000	30000	-13.289	-6.705	4.521	0.273	1.560	0.994
WS-3000-10-1.000000	3000	30000	-13.197	-7.598	4.718	0.403	1.484	0.994
WS-3000-2-0.000000	3000	6000	-1009.633	-782.526	0.956	0.637	1.289	0.916
WS-3000-2-0.200000	3000	6000	-84.434	-72.449	3.600	0.753	1.605	0.998
WS-3000-2-0.400000	3000	6000	-67.547	-58.655	4.058	0.969	1.518	0.999
WS-3000-2-0.600000	3000	6000	-61.428	-53.793	4.154	1.054	1.471	0.998
WS-3000-2-0.800000	3000	6000	-54.972	-48.274	3.886	0.994	1.432	0.995
WS-3000-2-1.000000	3000	6000	-54.804	-48.290	3.954	1.026	1.429	0.996
WS-3000-3-0.000000	3000	9000	-915.908	-772.541	0.963	0.475	1.448	0.915
WS-3000-3-0.200000	3000	9000	-55.398	-44.642	3.842	0.529	1.848	0.995
WS-3000-3-0.400000	3000	9000	-43.266	-36.210	4.167	0.694	1.644	0.994
WS-3000-3-0.600000	3000	9000	-43.523	-36.989	4.832	1.046	1.545	0.995
WS-3000-3-0.800000	3000	9000	-36.623	-31.200	4.153	0.903	1.456	0.992
WS-3000-3-1.000000	3000	9000	-36.607	-31.369	4.182	0.946	1.441	0.993
WS-3000-4-0.000000	3000	12000	-791.548	-655.289	0.969	0.359	1.615	0.915
WS-3000-4-0.200000	3000	12000	-43.082	-33.685	4.018	0.418	2.044	0.993
WS-3000-4-0.400000	3000	12000	-37.144	-30.449	4.737	0.657	1.814	0.994
WS-3000-4-0.600000	3000	12000	-29.912	-23.068	4.184	0.597	1.557	0.990
WS-3000-4-0.800000	3000	12000	-30.583	-25.190	4.604	0.914	1.489	0.991
WS-3000-4-1.000000	3000	12000	-30.644	-25.608	4.700	1.012	1.465	0.991
WS-3000-5-0.000000	3000	15000	-689.401	-535.478	0.974	0.276	1.787	0.915
WS-3000-5-0.200000	3000	15000	-36.963	-27.855	4.203	0.378	2.239	0.992
WS-3000-5-0.400000	3000	15000	-30.976	-23.813	4.819	0.570	1.901	0.991
WS-3000-5-0.600000	3000	15000	-31.185	-26.156	5.586	0.967	1.686	0.996
WS-3000-5-0.800000	3000	15000	-20.896	-13.380	3.465	0.335	1.467	0.995
WS-3000-5-1.000000	3000	15000	-31.012	-26.783	5.844	1.269	1.538	0.997

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
WS-3000-6-0.000000	3000	18000	-606.040	-434.032	0.979	0.216	1.965	0.915
WS-3000-6-0.200000	3000	18000	-29.171	-16.177	3.783	0.137	2.375	0.987
WS-3000-6-0.400000	3000	18000	-18.574	-5.693	3.303	0.056	1.957	0.993
WS-3000-6-0.600000	3000	18000	-22.510	-14.650	4.601	0.362	1.683	0.989
WS-3000-6-0.800000	3000	18000	-23.589	-17.938	5.156	0.805	1.525	0.987
WS-3000-6-1.000000	3000	18000	-23.603	-18.304	5.226	0.901	1.493	0.987
WS-3000-7-0.000000	3000	21000	-543.096	-354.468	0.984	0.172	2.147	0.915
WS-3000-7-0.200000	3000	21000	-30.864	-21.784	4.711	0.363	2.596	0.992
WS-3000-7-0.400000	3000	21000	-22.251	-11.711	4.621	0.176	2.094	0.985
WS-3000-7-0.600000	3000	21000	-24.364	-18.811	6.109	0.878	1.771	0.983
WS-3000-7-0.800000	3000	21000	-24.881	-20.734	6.584	1.412	1.577	0.991
WS-3000-7-1.000000	3000	21000	-24.853	-20.941	6.638	1.513	1.543	0.992
WS-3000-8-0.000000	3000	24000	-490.301	-281.116	0.987	0.139	2.335	0.915
WS-3000-8-0.200000	3000	24000	-30.238	-21.636	5.066	0.361	2.828	0.994
WS-3000-8-0.400000	3000	24000	-24.019	-16.624	5.858	0.494	2.226	0.982
WS-3000-8-0.600000	3000	24000	-24.912	-19.978	6.782	1.055	1.838	0.997
WS-3000-8-0.800000	3000	24000	-24.895	-20.860	7.004	1.390	1.640	0.998
WS-3000-8-1.000000	3000	24000	-24.779	-21.060	7.080	1.511	1.588	0.998
WS-3000-9-0.000000	3000	27000	-444.903	-220.929	0.991	0.114	2.525	0.915
WS-3000-9-0.200000	3000	27000	-21.096	-5.269	3.979	0.049	2.786	0.985
WS-3000-9-0.400000	3000	27000	-24.522	-18.085	6.403	0.654	2.354	0.993
WS-3000-9-0.600000	3000	27000	-24.633	-19.591	6.874	0.957	1.937	0.997
WS-3000-9-0.800000	3000	27000	-11.344	-5.219	3.830	0.232	1.512	0.996
WS-3000-9-1.000000	3000	27000	-10.957	-5.737	3.989	0.317	1.458	0.996
WS-3500-10-0.000000	3500	35000	-473.748	-204.444	0.990	0.098	2.680	0.915
WS-3500-10-0.200000	3500	35000	-22.253	-7.446	4.529	0.069	2.966	0.983
WS-3500-10-0.400000	3500	35000	-24.695	-18.025	6.612	0.617	2.451	0.997
WS-3500-10-0.600000	3500	35000	-10.508	-1.707	3.699	0.062	1.791	0.996
WS-3500-10-0.800000	3500	35000	-12.369	-5.656	4.201	0.219	1.548	0.996
WS-3500-10-1.000000	3500	35000	-12.185	-6.453	4.378	0.319	1.480	0.996
WS-3500-2-0.000000	3500	7000	-1156.250	-896.088	0.956	0.644	1.283	0.916
WS-3500-2-0.200000	3500	7000	-85.427	-73.010	3.584	0.727	1.598	0.997
WS-3500-2-0.400000	3500	7000	-68.432	-59.220	4.001	0.924	1.512	0.998
WS-3500-2-0.600000	3500	7000	-62.180	-54.341	4.175	1.043	1.465	0.998
WS-3500-2-0.800000	3500	7000	-55.398	-48.446	3.819	0.934	1.428	0.995
WS-3500-2-1.000000	3500	7000	-55.398	-48.613	3.885	0.978	1.421	0.996
WS-3500-3-0.000000	3500	10500	-1053.792	-907.496	0.963	0.483	1.438	0.915
WS-3500-3-0.200000	3500	10500	-55.926	-44.769	3.839	0.507	1.839	0.995
WS-3500-3-0.400000	3500	10500	-43.634	-36.317	4.091	0.649	1.637	0.994
WS-3500-3-0.600000	3500	10500	-43.967	-37.275	4.791	0.995	1.543	0.996
WS-3500-3-0.800000	3500	10500	-36.584	-30.476	3.979	0.771	1.458	0.993
WS-3500-3-1.000000	3500	10500	-43.870	-37.725	5.063	1.202	1.492	0.996
WS-3500-4-0.000000	3500	14000	-915.242	-772.501	0.967	0.366	1.601	0.915
WS-3500-4-0.200000	3500	14000	-43.556	-33.663	3.870	0.374	2.047	0.994
WS-3500-4-0.400000	3500	14000	-37.696	-30.773	4.676	0.638	1.801	0.995
WS-3500-4-0.600000	3500	14000	-37.524	-31.282	5.420	0.991	1.626	0.995

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
WS-3500-4-0.800000	3500	14000	-30.563	-24.564	4.420	0.785	1.485	0.992
WS-3500-4-1.000000	3500	14000	-30.530	-24.824	4.462	0.851	1.462	0.991
WS-3500-5-0.000000	3500	17500	-797.200	-631.765	0.972	0.282	1.770	0.915
WS-3500-5-0.200000	3500	17500	-37.353	-27.609	4.131	0.347	2.240	0.993
WS-3500-5-0.400000	3500	17500	-30.991	-23.075	4.712	0.489	1.893	0.989
WS-3500-5-0.600000	3500	17500	-31.655	-26.446	5.591	0.975	1.672	0.996
WS-3500-5-0.800000	3500	17500	-31.544	-27.000	5.813	1.187	1.562	0.997
WS-3500-5-1.000000	3500	17500	-31.487	-27.117	5.826	1.255	1.532	0.997
WS-3500-6-0.000000	3500	21000	-702.599	-517.709	0.977	0.222	1.942	0.915
WS-3500-6-0.200000	3500	21000	-28.878	-13.738	3.600	0.088	2.377	0.989
WS-3500-6-0.400000	3500	21000	-31.222	-24.495	5.475	0.614	2.066	0.996
WS-3500-6-0.600000	3500	21000	-22.033	-13.335	4.311	0.267	1.664	0.992
WS-3500-6-0.800000	3500	21000	-23.367	-16.842	4.798	0.606	1.524	0.989
WS-3500-6-1.000000	3500	21000	-23.469	-17.454	4.881	0.712	1.488	0.990
WS-3500-7-0.000000	3500	24500	-626.937	-415.229	0.981	0.176	2.120	0.915
WS-3500-7-0.200000	3500	24500	-31.167	-21.765	4.771	0.353	2.569	0.991
WS-3500-7-0.400000	3500	24500	-21.594	-9.470	4.260	0.104	2.083	0.990
WS-3500-7-0.600000	3500	24500	-24.228	-17.932	5.866	0.704	1.750	0.984
WS-3500-7-0.800000	3500	24500	-24.940	-20.348	6.391	1.277	1.576	0.986
WS-3500-7-1.000000	3500	24500	-24.901	-20.665	6.473	1.414	1.530	0.987
WS-3500-8-0.000000	3500	28000	-566.089	-335.557	0.984	0.143	2.303	0.915
WS-3500-8-0.200000	3500	28000	-17.186	2.736	2.929	0.015	2.592	0.993
WS-3500-8-0.400000	3500	28000	-23.741	-14.896	5.540	0.330	2.212	0.982
WS-3500-8-0.600000	3500	28000	-25.096	-19.995	6.825	1.042	1.828	0.994
WS-3500-8-0.800000	3500	28000	-25.258	-21.066	7.052	1.411	1.628	0.997
WS-3500-8-1.000000	3500	28000	-25.183	-21.300	7.131	1.538	1.575	0.998
WS-3500-9-0.000000	3500	31500	-516.414	-269.465	0.988	0.118	2.489	0.915
WS-3500-9-0.200000	3500	31500	-20.006	-1.991	3.621	0.027	2.777	0.990
WS-3500-9-0.400000	3500	31500	-24.698	-17.945	6.430	0.619	2.345	0.991
WS-3500-9-0.600000	3500	31500	-9.150	-1.245	3.332	0.063	1.725	0.997
WS-3500-9-0.800000	3500	31500	-24.894	-20.768	7.232	1.320	1.677	0.998
WS-3500-9-1.000000	3500	31500	-8.609	-4.207	3.709	0.265	1.451	0.997
WS-4000-10-0.000000	4000	40000	-538.352	-243.745	0.988	0.100	2.644	0.915
WS-4000-10-0.200000	4000	40000	-21.928	-5.379	4.293	0.045	2.968	0.987
WS-4000-10-0.400000	4000	40000	-24.957	-18.100	6.672	0.615	2.445	0.996
WS-4000-10-0.600000	4000	40000	-9.731	-0.976	3.564	0.052	1.784	0.997
WS-4000-10-0.800000	4000	40000	-11.436	-4.715	3.940	0.183	1.538	0.997
WS-4000-10-1.000000	4000	40000	-11.031	-5.433	4.120	0.269	1.474	0.997
WS-4000-2-0.000000	4000	8000	-1299.311	-1008.791	0.955	0.649	1.278	0.916
WS-4000-2-0.200000	4000	8000	-86.202	-73.237	3.638	0.719	1.597	0.997
WS-4000-2-0.400000	4000	8000	-68.898	-59.507	4.014	0.906	1.508	0.998
WS-4000-2-0.600000	4000	8000	-62.516	-54.632	4.153	1.008	1.463	0.998
WS-4000-2-0.800000	4000	8000	-55.692	-48.508	3.767	0.887	1.425	0.996
WS-4000-2-1.000000	4000	8000	-55.781	-48.757	3.814	0.925	1.419	0.996
WS-4000-3-0.000000	4000	12000	-1195.840	-1028.042	0.961	0.487	1.431	0.916
WS-4000-3-0.200000	4000	12000	-56.574	-45.198	3.866	0.497	1.836	0.995

Network	Nodes	Edges	$SBICR_l$	$SBICR_{(q,q')}$	d_l	$d_{q,q'}$	q	q'
WS-4000-3-0.400000	4000	12000	-43.965	-36.374	3.991	0.607	1.628	0.995
WS-4000-3-0.600000	4000	12000	-44.244	-37.548	4.725	0.939	1.542	0.996
WS-4000-3-0.800000	4000	12000	-36.499	-29.843	3.837	0.682	1.452	0.994
WS-4000-3-1.000000	4000	12000	-36.544	-30.219	3.882	0.737	1.434	0.994
WS-4000-4-0.000000	4000	16000	-1035.037	-882.119	0.966	0.372	1.590	0.916
WS-4000-4-0.200000	4000	16000	-43.875	-33.771	3.890	0.366	2.031	0.993
WS-4000-4-0.400000	4000	16000	-38.088	-30.865	4.621	0.613	1.799	0.995
WS-4000-4-0.600000	4000	16000	-29.399	-21.055	3.791	0.399	1.540	0.993
WS-4000-4-0.800000	4000	16000	-30.326	-23.630	4.179	0.653	1.476	0.992
WS-4000-4-1.000000	4000	16000	-30.326	-24.063	4.273	0.727	1.457	0.993
WS-4000-5-0.000000	4000	20000	-903.676	-728.181	0.970	0.287	1.755	0.915
WS-4000-5-0.200000	4000	20000	-37.528	-26.953	4.023	0.305	2.217	0.991
WS-4000-5-0.400000	4000	20000	-30.941	-22.054	4.541	0.392	1.887	0.990
WS-4000-5-0.600000	4000	20000	-32.034	-26.574	5.551	0.959	1.663	0.995
WS-4000-5-0.800000	4000	20000	-31.941	-27.261	5.799	1.184	1.553	0.997
WS-4000-5-1.000000	4000	20000	-31.909	-27.414	5.835	1.252	1.526	0.997
WS-4000-6-0.000000	4000	24000	-798.640	-600.849	0.974	0.226	1.924	0.915
WS-4000-6-0.200000	4000	24000	-28.448	-11.446	3.402	0.057	2.365	0.991
WS-4000-6-0.400000	4000	24000	-31.685	-24.682	5.477	0.612	2.059	0.996
WS-4000-6-0.600000	4000	24000	-21.598	-12.112	4.043	0.200	1.660	0.994
WS-4000-6-0.800000	4000	24000	-23.077	-15.931	4.508	0.482	1.513	0.992
WS-4000-6-1.000000	4000	24000	-23.257	-16.672	4.597	0.585	1.476	0.992
WS-4000-7-0.000000	4000	28000	-713.025	-485.458	0.978	0.180	2.099	0.915
WS-4000-7-0.200000	4000	28000	-30.971	-19.929	4.522	0.246	2.566	0.989
WS-4000-7-0.400000	4000	28000	-20.862	-7.498	4.004	0.068	2.080	0.992
WS-4000-7-0.600000	4000	28000	-24.021	-16.919	5.608	0.549	1.747	0.985
WS-4000-7-0.800000	4000	28000	-24.833	-19.732	6.146	1.100	1.569	0.985
WS-4000-7-1.000000	4000	28000	-24.857	-20.072	6.213	1.213	1.532	0.985
WS-4000-8-0.000000	4000	32000	-642.994	-389.144	0.982	0.146	2.277	0.915
WS-4000-8-0.200000	4000	32000	-31.328	-22.101	5.092	0.365	2.769	0.995
WS-4000-8-0.400000	4000	32000	-23.389	-13.109	5.253	0.215	2.226	0.985
WS-4000-8-0.600000	4000	32000	-25.191	-19.748	6.761	0.970	1.831	0.991
WS-4000-8-0.800000	4000	32000	-25.526	-21.202	7.088	1.417	1.616	0.997
WS-4000-8-1.000000	4000	32000	-25.427	-21.415	7.149	1.540	1.566	0.997
WS-4000-9-0.000000	4000	36000	-588.018	-317.992	0.985	0.121	2.459	0.915
WS-4000-9-0.200000	4000	36000	-19.247	0.413	3.387	0.018	2.784	0.992
WS-4000-9-0.400000	4000	36000	-24.634	-17.172	6.284	0.519	2.351	0.985
WS-4000-9-0.600000	4000	36000	-25.304	-20.013	7.079	0.994	1.896	0.998
WS-4000-9-0.800000	4000	36000	-7.243	-2.677	3.382	0.165	1.500	0.998
WS-4000-9-1.000000	4000	36000	-25.134	-21.185	7.363	1.456	1.611	0.999

Table S4. Mann-Whitney U test using adjusted alpha $\alpha = 3.333\text{e-}04$ for d_{ℓ} . * Means statistical difference.

i \ j	BA	SHM
BA	--	--
SHM	U(Ni=216, Nj=225)=11113.332, z=9.925, p=3.232e-23	--
WS	U(Ni=216, Nj=225)=14229.951, z=7.617, p=2.606e-14	*U(Ni=216, Nj=216)=19138.193, z=-3.422, p=6.208e-04

Table S5. Mann-Whitney U test using adjusted alpha $\alpha = 3.333\text{e-}04$ for $d_{(q,q')}$.

i \ j	BA	SHM
BA	--	--
SHM	U(Ni=216, Nj=225)=16791.348, z=5.731, p=9.996e-09	--
WS	U(Ni=216, Nj=225)=2580.340, z=16.276, p=1.460e-59	U(Ni=216, Nj=216)=16041.450, z=5.734, p=9.780e-09