Clusters ID Cards

This document gathers the "ID Cards" of the BC clusters found within the studied database.
The BC network was built by linking pairs of publications based on the references they share. We only kept links between publications sharing more than 3 references - 5831 out of 7890 publications are in the network. The 8 clusters presented here correspond to the ones found in the top level grouping at least 30 publications. They gather a total of 5555 publications.
These ID cards displays the most frequent keywords, subject categories, journals of publication, institutions, countries, authors, references and reference journals of the publications of each cluster. The significance of an item $\sigma = \sqrt{N}(f-p)/\sqrt{p(1-p)}$ - where N is the number of publications within the cluster and f and p are the proportion of publications respectively within the cluster and within the database displaying that item - is also given.

Figure 1: **Top clusters network.** The sizes of the nodes correspond to the number of publications in each cluster, their color to the top cluster they belong to. The edges reflect shared references between clusters: the thicker an edge between two clusters, the more references they share. Labels correspond to the most significant used keyword.

Quantitative characteristics of the clusters. N is the number of publications within the cluster, $< N_{ref} >$ the average number of references per publication. The cohesiveness of the cluster can be measured by: the average degree k of its publications (i.e. average number of links within the cluster per publication), its density in terms of BC links $d = 2k/(N-1)$, the weighted density $< \omega_{in} >$, the inner modularity Q_i obtained when splitting the cluster in a sub-partition, and the module q of the cluster within the partition. To quantify how a cluster can concentrate on a given number of references, we also display the h-index h_{ref} (h references are cited by at least h publications of the cluster) and the numbers nr_{10}, nr_5, nr_2, where nr_x is the number of references cited by at least x% of publications within the cluster. To estimate the 'hotness' of a cluster, we display the average publication year of the publications within the cluster $< PY >$, the average age of the references used in the cluster $< A >_{refs}$, the average number of citation per publication (according to Web Of Science) $< N_{cit} >$, the h index h of the cluster (h publications have been cited at least h times).

Corpus	N	$< N_{ref} >$	k	d	$< \omega_{in} > *10^3$	Q_i	q	h_{ref}	$nr_{10}/nr_5/nr_2$	$< PY >$	$< A >_{refs}$	$< N_{cit} >$	h
All in BC	5831	39.91	182.83	0.063	1.682	0.556	-	-	-	2011.98	11.16	26.02	135
Cluster 2	1623	42.67	229.64	0.283	14.543	0.221	0.169	67	11/48/176	2012.44	9.67	44.23	96
Cluster 1	1284	37.56	45.39	0.071	4.099	0.520	0.055	48	4/27/130	2009.31	13.52	16.81	66
Cluster 4	1191	35.79	114.83	0.193	11.275	0.312	0.108	51	11/38/174	2012.88	12.17	13.31	53
Cluster 3	640	47.94	321.56	1.006	67.005	0.097	0.170	63	56/148/376	2013.32	9.53	25.03	61
Cluster 13	299	39.93	107.65	0.722	48.144	0.090	0.034	30	29/72/244	2013.72	9.63	35.31	36
Cluster 26	279	42.13	43.11	0.310	20.430	0.218	0.014	21	14/50/186	2013.37	11.74	28.22	36
Cluster 25	152	35.08	20.49	0.271	18.451	0.361	0.004	17	17/49/193	2013.70	8.77	21.53	25
Cluster 10	87	33.20	10.60	0.246	20.386	0.649	0.001	10	17/75/425	2010.30	13.88	14.29	21

Cluster 2 ("COMPLEX NETWORKS"). This cluster contains $N = 1623$ publications.

Keywords	f(%)	σ
COMPLEX NETWORKS	38.45	25.85
DYNAMICS	27.60	3.10
SOCIAL NETWORKS	17.68	14.55
MODEL	12.32	-0.75
SMALL-WORLD NETWORKS	9.61	12.35
NETWORKS	7.27	-2.09
SCALE-FREE NETWORKS	7.15	10.00
BEHAVIOR	6.90	-0.84
EVOLUTION	6.90	0.63
SYSTEMS	5.61	-1.56
INTERNET	5.30	11.98
MODELS	4.99	1.98
WEB	4.93	10.28
COMMUNITY STRUCTURE	4.87	7.11
CENTRALITY	4.68	9.89
SPREAD	4.44	10.79
EMERGENCE	3.88	-1.82
ORGANIZATION	3.39	4.92
DIFFUSION	3.27	4.34
SMALL-WORLD	3.27	10.21
Title Words	f(%)	σ
NETWORKS	52.68	35.93
SOCIAL	24.28	10.67
NETWORK	18.48	18.36
COMPLEX	16.64	18.83
MODEL	13.74	0.56
SPREADING	9.49	19.27
DYNAMICS	9.18	0.04
INFORMATION	7.64	7.93
BASED	5.55	1.55
EPIDEMIC	5.48	15.06
Journal	f(%)	σ
PHYSICA A	26.43	1.37
PHYS REV E	19.84	10.94
EPL-EUROPHYS LETT	3.88	4.14
EUR PHYS J B	3.88	2.98
INT J MOD PHYS C	3.27	0.87
J STAT MECH-THEORY E	2.96	1.63
NEW J PHYS	2.96	4.20
CHAOS	2.65	5.57
PHYS REV LETT	2.28	3.58
ACTA PHYS SIN-CH ED	1.97	5.51

Institution	f(%)	σ
DEPT PHYS	19.72	6.09
DEPT MATH	5.05	1.60
UNIV ELECT SCI & TECHNOL CHINA	4.07	8.22
SCH MATH SCI	3.51	6.08
DEPT COMP SCI	3.45	3.72
DEPT FIS	3.08	1.18
BOSTON UNIV	2.96	3.18
CTR POLYMER STUDIES	2.90	3.88
WEB SCI CTR	2.83	7.22
SCH SCI	2.71	2.17
SCH MANAGEMENT	2.40	3.24
BEIHANG UNIV	2.22	5.64
BEIJING NORMAL UNIV	2.16	5.02
SANTA FE INST	2.16	4.36
INST THEORET PHYS	2.09	-0.72
NORTHEASTERN UNIV	2.09	5.03
BIG DATA RES CTR	2.03	7.35
UNIV ZARAGOZA	2.03	3.58
CNRS	1.91	-0.12
DEPT ELECT ENGN	1.91	2.84
Country	f(%)	σ
Peoples R China	37.58	11.20
USA	23.97	3.67
UK	9.06	2.69
Italy	8.81	1.60
Spain	7.95	4.72
Germany	6.59	-0.55
Brazil	4.31	-1.01
Switzerland	4.07	3.03
France	3.51	-1.52
Israel	3.51	4.87
Author	f(%)	σ
Stanley HE	1.97	2.90
Wang W	1.66	8.40
Zhou T	1.66	5.23
Havlin S	1.48	5.24
Bianconi G	1.42	7.89
Latora V	1.17	5.01
Newman MEJ	1.11	5.89
Tang M	1.11	6.59
Moreno Y	1.05	3.07
Gomez-Gardenes J	0.99	3.41

Reference	f(%)	σ
Barabasi AL, 1999, SCIENCE, 286, 509	41.16	33.34
Watts DJ, 1998, NATURE, 393, 440	40.48	34.86
Albert R, 2002, REV MOD PHYS, 74, 47	34.75	31.73
Newman MEJ, 2003, SIAM REV, 45, 167	26.93	29.23
Pastor-Satorras R, 2001, PHYS REV LETT, 86, 3200	22.24	30.78
Castellano C, 2009, REV MOD PHYS, 81, 591	20.76	1.86
Newman MEJ, 2001, PHYS REV E, 64, 0	18.48	26.71
Boccaletti S, 2006, PHYS REP, 424, 175	17.25	20.40
Newman MEJ, 2002, PHYS REV LETT, 89, 0	12.32	21.44
Newman M, 2010, NETWORKS INTRO	10.84	16.74
Newman MEJ, 2002, PHYS REV E, 66, 0	10.72	21.35
Erdos P, 1959, PUBL MATH-DEBRECEN, 6, 290	9.80	16.53
Albert R, 2000, NATURE, 406, 378	9.67	19.74
Dorogovtsev SN, 2002, ADV PHYS, 51, 1079	9.61	19.48
Girvan M, 2002, P NATL ACAD SCI USA, 99, 7821	9.43	9.67
Newman MEJ, 2001, P NATL ACAD SCI USA, 98, 404	9.24	16.99
Strogatz SH, 2001, NATURE, 410, 268	9.24	17.76
Barrat A, 2008, DYNAMICAL PROCESSES	9.12	16.60
Kitsak M, 2010, NAT PHYS, 6, 888	8.81	18.63
Amaral LAN, 2000, P NATL ACAD SCI USA, 97, 11149	7.70	16.85
RefJournal	f(%)	σ
PHYS REV E	89.28	24.57
PHYS REV LETT	77.33	23.61
NATURE	73.75	22.78
SCIENCE	68.52	27.60
P NATL ACAD SCI USA	63.65	22.21
PHYSICA A	60.81	6.83
REV MOD PHYS	54.71	19.43
EUR PHYS J B	38.45	5.59
SIAM REV	34.75	28.36
PHYS REP	33.70	12.61
Subject	f(%)	σ
Physics, Multidisciplinary	51.76	1.17
Physics, Mathematical	36.66	9.28
Physics, Fluids & Plasmas	20.70	9.93
Physics, Condensed Matter	6.28	0.87
Multidisciplinary Sciences	4.93	3.20
Mathematics, Applied	4.81	-1.82
Computer Science, Interdisciplinary Applications	3.88	-0.58
Mechanics	3.82	0.09
Physics, Applied	3.39	-13.82
Mathematics, Interdisciplinary Applications	2.59	-3.25

Cluster 2 ("COMPLEX NETWORKS"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
1289	5052	Boccaletti S, 2006, PHYS REP(424)	Complex networks: Structure and dynamics
638	4520	Newman MEJ, 2004, PHYS REV E(69)	Finding and evaluating community structure in networks
283	2747	Pastor-Satorras R, 2001, PHYS REV LETT(86)	Epidemic spreading in scale-free networks
525	2482	Newman MEJ, 2001, PHYS REV E(64)	Random graphs with arbitrary degree distributions and their applications
517	2093	Newman MEJ, 2002, PHYS REV LETT(89)	Assortative mixing in networks
91	2053	Newman MEJ, 2005, CONTEMP PHYS(46)	Power laws, Pareto distributions and Zipf's law
862	1802	Dorogovtsev SN, 2002, ADV PHYS(51)	Evolution of networks
853	1643	Arenas A, 2008, PHYS REP(469)	Synchronization in complex networks
335	1610	Newman MEJ, 2002, PHYS REV E(66)	Email networks and the spread of computer viruses
592	1610	Newman MEJ, 2002, PHYS REV E(66)	Spread of epidemic disease on networks
61	1331	Barabasi AL, 1999, PHYSICA A(272)	Mean-field theory for scale-free random networks
83	1196	Callaway DS, 2000, PHYS REV LETT(85)	Network robustness and fragility: Percolation on random graphs
612	1139	Barabasi AL, 2002, PHYSICA A(311)	Evolution of the social network of scientific collaborations
869	1064	Newman MEJ, 2003, PHYS REV E(67)	Mixing patterns in networks

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
1336	501	Pastor-Satorras R, 2015, REV MOD PHYS(87)	Epidemic processes in complex networks
1289	5052	Boccaletti S, 2006, PHYS REP(424)	Complex networks: Structure and dynamics
1287	195	Wang Z, 2016, PHYS REP(664)	Statistical physics of vaccination
1242	228	Costa LD, 2011, ADV PHYS(60)	Analyzing and modeling real-world phenomena with complex networks: a survey of applications
1131	810	Boccaletti S, 2014, PHYS REP(544)	The structure and dynamics of multilayer networks
1117	73	Pei S, 2013, J STAT MECH-THEORY E()	Spreading dynamics in complex networks
1051	756	Barthelemy M, 2011, PHYS REP(499)	Spatial networks
1033	59	Zhang ZK, 2016, PHYS REP(651)	Dynamics of information diffusion and its applications on complex networks
1018	81	Havlin S, 2012, EUR PHYS J-SPEC TOP(214)	Challenges in network science: Applications to infrastructures, climate, social systems and economics
998	459	Gao JX, 2012, NAT PHYS(8)	Networks formed from interdependent networks
990	0	Bohme GA, 2013, EUR PHYS J-SPEC TOP(222)	Emergence and persistence of diversity in complex networks
983	17	Zheng XL, 2012, FRONT COMPUT SCI-CHI(6)	Social influence and spread dynamics in social networks
976	0	Diaz-Guilera A, 2007, AIP CONF PROC(885)	Complex networks: Statics and dynamics
944	334	Lu LY, 2012, PHYS REP(519)	Recommender systems

Cluster 2 ("COMPLEX NETWORKS"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Newman MEJ	18	20099	7080
Moreno Y	17	7957	6438
Latora V	19	6235	6019
Boccaletti S	12	5996	5711
Watts DJ	6	5600	754
Chavez M	2	5066	1352
Hwang DU	1	5052	1289
Vespignani A	9	4977	4296
Girvan M	3	4721	1168
Pastor-Satorras R	12	4693	5505
Barabasi AL	12	4039	3392
Strogatz SH	2	3678	608
Arenas A	13	3139	3366
Jeong H	9	2647	2428
Diaz-Guilera A	7	2612	3432
Bianconi G	23	2234	6791
Zhou T	27	2219	10278
Kurths J	14	1986	5050
Lu LY	11	1955	4385

Most Representative Authors

Author	N_a	TC_a	k_a
Zhou T	27	2219	10278
Havlin S	24	1916	8765
Stanley HE	32	1640	8112
Zhang ZK	16	678	7090
Newman MEJ	18	20099	7080
Bianconi G	23	2234	6791
Wang W	27	165	6693
Moreno Y	17	7957	6438
Latora V	19	6235	6019
Boccaletti S	12	5996	5711
Pastor-Satorras R	12	4693	5505
Tang M	18	243	5502
Liu C	15	294	5474
Vicsek T	12	1754	5447
Lai YC	14	399	5383
Costa LD	12	1263	5334
Kurths J	14	1986	5050
Rodrigues FA	7	1266	4959
Pei S	14	318	4941

Cluster 1 ("FLUCTUATIONS"). This cluster contains $N = 1284$ publications.

Keywords	f(%)	σ
DYNAMICS	16.59	-6.44
MODEL	14.41	1.55
FLUCTUATIONS	12.93	20.62
VOLATILITY	9.58	18.96
FINANCIAL-MARKETS	9.42	16.85
STOCK-MARKET	8.80	18.33
BEHAVIOR	8.33	1.20
TIME-SERIES	8.02	14.84
DISTRIBUTIONS	7.63	12.36
MARKET	7.24	14.62
LAW	6.62	12.75
STATISTICAL-MECHANICS	6.46	7.29
RETURNS	5.92	14.75
SYSTEMS	5.84	-1.04
ECONOMICS	5.69	9.76
MONEY	5.45	13.95
INCOME	5.06	13.52
MARKETS	4.98	11.54
ECONOPHYSICS	4.91	12.70
WEALTH	4.44	12.10

Title Words	f(%)	σ
MARKET	16.04	25.23
STOCK	15.81	27.90
FINANCIAL	13.40	24.32
MARKETS	10.75	21.77
MODEL	10.59	-2.83
ANALYSIS	8.41	4.16
DISTRIBUTION	7.01	12.81
TIME	7.01	11.47
DYNAMICS	6.54	-3.24
STATISTICAL	6.07	9.44

Journal	f(%)	σ
PHYSICA A	58.64	27.90
PHYS REV E	5.30	-6.76
INT J MOD PHYS C	3.43	1.12
EUR PHYS J B	2.80	0.26
EUR PHYS J-SPEC TOP	2.18	3.09
CHAOS SOLITON FRACT	2.02	-0.07
ENTROPY-SWITZ	1.56	0.30
J KOREAN PHYS SOC	1.48	5.59
AIP CONF PROC	1.17	-7.57
NEW J PHYS	1.17	-1.32

Institution	f(%)	σ
DEPT PHYS	23.05	8.83
DEPT ECON	6.23	10.68
BOSTON UNIV	5.45	9.40
CTR POLYMER STUDIES	4.91	9.08
INST THEORET PHYS	4.75	5.62
SCH BUSINESS	4.44	9.75
INST PHYS	4.13	5.49
DEPT MATH	3.82	-0.77
SCH SCI	3.58	4.18
E CHINA UNIV SCI & TECHNOL	3.35	9.93
RES CTR ECONOPHYS	3.35	11.86
DEPT FIS	2.80	0.43
CNRS	1.95	-0.01
DIPARTIMENTO FIS	1.79	2.59
UNIV COLOGNE	1.79	5.20
DEPT FINANCE	1.71	9.28
INST FIS	1.71	0.37
UNIV CALIF LOS ANGELES	1.64	4.39
CTR BRASILEIRO PESQUISAS FIS	1.56	7.31
INFM	1.56	4.15

Country	f(%)	σ
USA	19.47	-0.75
Peoples R China	16.90	-7.05
Italy	11.21	4.65
Germany	10.83	5.47
Brazil	6.93	3.47
Japan	6.54	3.37
UK	6.23	-1.50
Poland	5.06	1.70
France	4.75	0.84
South Korea	3.82	2.88

Author	f(%)	σ
Stanley HE	4.05	9.44
Zhou WX	4.05	13.73
Sornette D	2.18	7.66
Ausloos M	1.87	7.02
Amaral LAN	1.79	7.44
Plerou V	1.64	9.52
Gopikrishnan P	1.56	9.29
Kaizoji T	1.25	7.65
Chakraborti A	1.17	6.78
Jiang ZQ	1.17	6.27

Reference	f(%)	σ
Mantegna RN, 1995, NATURE, 376, 46	17.91	30.99
Mandelbrot B, 1963, J BUS, 36, 394	11.53	24.82
Mantegna RN, 2000, INTRO ECONOPHYSICS C	11.53	24.48
Mantegna RN, 1999, INTRO ECONOPHYSICS C	10.12	20.98
Gopikrishnan P, 1999, PHYS REV E, 60, 5305	9.97	22.64
Peng CK, 1994, PHYS REV E, 49, 1685	9.97	22.06
Liu YH, 1999, PHYS REV E, 60, 1390	9.03	21.97
Lux T, 1999, NATURE, 397, 498	8.41	20.02
Bouchaud J P, 2000, THEORY FINANCIAL RIS	7.63	20.41
Plerou V, 1999, PHYS REV LETT, 83, 1471	6.93	18.57
Challet D, 1997, PHYSICA A, 246, 407	6.78	16.33
Dragulescu A, 2000, EUR PHYS J B, 17, 723	6.70	17.16
Gabaix X, 2003, NATURE, 423, 267	6.62	17.96
Gopikrishnan P, 1998, EUR PHYS J B, 3, 139	6.54	18.72
Mantegna RN, 1999, EUR PHYS J B, 11, 193	6.54	16.30
Dragulescu A, 2001, PHYSICA A, 299, 213	6.23	17.65
Pareto V, 1897, COURS EC POLITIQUE	6.15	17.24
Fama EF, 1970, J FINANC, 25, 383	6.07	17.87
Black F, 1973, J POLIT ECON, 81, 637	6.00	16.16
Cont R, 2000, MACROECON DYN, 4, 170	5.92	15.27

RefJournal	f(%)	σ
PHYSICA A	87.15	24.97
PHYS REV E	66.20	5.02
EUR PHYS J B	56.07	18.51
PHYS REV LETT	50.78	1.96
NATURE	44.16	-1.03
P NATL ACAD SCI USA	25.93	-8.23
INTRO ECONOPHYSICS C	25.08	33.27
ECONOMETRICA	21.50	21.20
QUANT FINANC	20.17	28.74
EUROPHYS LETT	18.93	6.98

Subject	f(%)	σ
Physics, Multidisciplinary	77.80	19.71
Physics, Mathematical	17.68	-7.16
Physics, Fluids & Plasmas	5.92	-7.16
Physics, Condensed Matter	4.75	-1.58
Physics, Applied	3.97	-11.72
Computer Science, Interdisciplinary Applications	3.74	-0.78
Mathematics, Interdisciplinary Applications	3.50	-1.26
Mathematics, Applied	2.65	-4.91
Mechanics	1.95	-3.44
Multidisciplinary Sciences	0.93	-4.97

Cluster 1 ("FLUCTUATIONS"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
52	357	Scalas E, 2000, PHYSICA A(284)	Fractional calculus and continuous-time finance
14	334	Hlavackova-Schindler K, 2007, PHYS REP(441)	Causality detection based on information-theoretic approaches in time series analysis
8	290	Mainardi F, 2000, PHYSICA A(287)	Fractional calculus and continuous-time finance II: the waiting-time distribution
61	273	Dragulescu A, 2001, PHYSICA A(299)	Exponential and power-law probability distributions of wealth and income in the United Kingdom and the United States
4	263	Savit R, 1999, PHYS REV LETT(82)	Adaptive competition, market efficiency, and phase transitions
8	255	Kaniadakis G, 2002, PHYS REV E(66)	Statistical mechanics in the context of special relativity
181	230	Yakovenko VM, 2009, REV MOD PHYS(81)	Colloquium: Statistical mechanics of money, wealth, and income
12	218	Raberto M, 2002, PHYSICA A(314)	Waiting-times and returns in high-frequency financial data: an empirical study
533	183	Kwapien J, 2012, PHYS REP(515)	Physical approach to complex systems
39	174	Amaral LAN, 1998, PHYS REV LETT(80)	Power law scaling for a system of interacting units with complex internal structure
48	165	Weron R, 2002, PHYSICA A(312)	Estimating long-range dependence: finite sample properties and confidence intervals
97	157	Amaral LAN, 1997, J PHYS I(7)	Scaling behavior in economics .1. Empirical results for company growth
71	151	Chatterjee A, 2004, PHYSICA A(335)	Pareto law in a kinetic model of market with random saving propensity
86	145	Plerou V, 2000, PHYS REV E(62)	Economic fluctuations and anomalous diffusion

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
533	183	Kwapien J, 2012, PHYS REP(515)	Physical approach to complex systems
406	15	Stanley HE, 2007, PHYSICA A(382)	Economic fluctuations and statistical physics: Quantifying extremely rare and less rare events in finance
399	55	Stanley HE, 2008, PHYSICA A(387)	A statistical physics view of financial fluctuations: Evidence for scaling and universality
392	83	Plerou V, 2000, PHYSICA A(279)	Econophysics: financial time series from a statistical physics point of view
377	77	Sornette D, 2014, REP PROG PHYS(77)	Physics and financial economics (1776-2014): puzzles, Ising and agent-based models
348	99	Gopikrishnan P, 2000, PHYSICA A(287)	Scaling and correlation in financial time series
348	0	Stanley HE, 2000, TRAFFIC AND GRANULAR FLOW'99: SOCIAL, TRAFFIC, AND GRANULAR DYNAMICS()	Econophysics: What can physicists contribute to economics?
339	1	Gopikrishnan P, 2000, AIP CONF PROC(519)	Financial time series: A physics perspective
319	20	Stanley HE, 2000, PHYSICA A(287)	Quantifying fluctuations in economic systems by adapting methods of statistical physics
300	24	Preis T, 2011, EUR PHYS J-SPEC TOP(194)	Econophysics - complex correlations and trend switchings in financial time series
298	4	Liang Y, 2013, FRONT PHYS-BEIJING(8)	Progress in physical properties of Chinese stock markets
290	9	Qiu T, 2011, PHYSICA A(390)	Memory effect and multifractality of cross-correlations in financial markets
281	18	Gu GF, 2007, PHYSICA A(383)	Statistical properties of daily ensemble variables in the Chinese stock markets
261	99	Stanley HE, 1999, PHYSICA A(269)	Econophysics: Can physicists contribute to the science of economics?

Cluster 1 ("FLUCTUATIONS"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Stanley HE	52	1993	7214
Zhou WX	52	1382	3290
Amaral LAN	23	1241	4291
Scalas E	14	1149	363
Sornette D	28	938	1353
Mainardi F	3	865	72
Buldyrev SV	14	721	852
Gopikrishnan P	20	716	4389
Havlin S	12	699	1117
Plerou V	21	691	4412
Gorenflo R	2	647	60
Yakovenko VM	6	642	479
Raberto M	4	632	131
Salinger MA	8	598	918
Mantegna RN	14	511	802
Stauffer D	12	468	481
Jiang ZQ	15	444	880
Weron R	9	443	350
Gabaix X	8	420	1802

Most Representative Authors

Author	N_a	TC_a	k_a
Stanley HE	52	1993	7214
Plerou V	21	691	4412
Gopikrishnan P	20	716	4389
Amaral LAN	23	1241	4291
Zhou WX	52	1382	3290
Gabaix X	8	420	1802
Qiu T	14	125	1719
Rosenow B	7	175	1489
Gu GF	14	279	1488
Sornette D	28	938	1353
Zhong LX	11	72	1312
Huang JP	13	81	1295
Chen W	13	263	1269
Chen G	7	87	1168
Zheng B	10	62	1135
Havlin S	12	699	1117
Ren F	14	150	1105
Chakraborti A	15	253	1035
Salinger MA	8	598	918

Cluster 4 ("CONSENSUS"). This cluster contains $N = 1191$ publications.

Keywords	f(%)	σ
DYNAMICS	35.77	9.23
MODEL	19.65	6.88
NETWORKS	15.62	8.41
EVOLUTION	10.33	5.33
SYSTEMS	7.72	1.62
COMPLEX NETWORKS	7.56	-7.45
CONSENSUS	6.97	15.86
OPINION DYNAMICS	6.47	14.54
BEHAVIOR	6.13	-1.74
MODELS	6.05	3.54
SZNAJD MODEL	5.12	13.98
PHYSICS	4.87	5.81
SOCIAL NETWORKS	4.11	-4.87
STATISTICAL PHYSICS	4.11	8.00
SMALL-WORLD NETWORKS	4.03	0.47
IMPACT	3.86	5.93
EMERGENCE	3.78	-1.72
STATISTICAL-MECHANICS	3.53	1.07
SOCIOPHYSICS	3.27	10.88
DISSEMINATION	3.19	10.16
Title Words	f(%)	σ
MODEL	31.32	18.36
OPINION	25.61	35.91
DYNAMICS	22.67	16.18
SOCIAL	18.22	3.27
NETWORKS	15.70	-2.27
FORMATION	9.32	17.68
CONSENSUS	6.97	18.51
MODELS	6.38	6.29
PHASE	5.63	11.33
INFLUENCE	4.45	6.23
Journal	f(%)	σ
PHYS REV E	17.55	6.87
PHYSICA A	17.30	-6.11
INT J MOD PHYS C	6.05	6.46
J STAT MECH-THEORY E	4.70	5.38
EPL-EUROPHYS LETT	3.44	2.54
EUR PHYS J B	3.27	1.25
PLOS ONE	3.19	6.43
J STAT PHYS	2.77	5.66
ADV COMPLEX SYST	2.43	10.56
SCI REP-UK	2.10	4.54

Institution	f(%)	σ
DEPT PHYS	13.18	-1.20
DEPT MATH	5.63	2.35
CNRS	5.12	7.92
DEPT FIS	4.87	4.88
INST FIS	4.45	7.91
UNIV SAO PAULO	3.27	7.69
DEPT COMP SCI	3.02	2.17
FAC PHYS	3.02	6.02
INST THEORET PHYS	2.77	0.92
UNIV ROMA LA SAPIENZA	2.35	4.91
INST PHYS	2.27	0.69
IFISC	2.18	8.14
WARSAW UNIV TECHNOL	2.18	6.01
CNR	1.93	3.09
CSIC	1.93	5.39
CONICET	1.76	6.55
DIPARTIMENTO FIS	1.68	2.12
SCH PHYS & ASTRON	1.68	4.84
AGH UNIV SCI & TECHNOL	1.60	4.80
BEIJING JIAOTONG UNIV	1.60	2.49
Country	f(%)	σ
USA	19.06	-1.07
Peoples R China	15.45	-7.94
Italy	11.08	4.30
Brazil	9.49	7.45
UK	9.49	2.87
France	9.40	8.74
Poland	8.82	8.15
Germany	7.72	1.06
Spain	7.64	3.57
Argentina	3.86	6.05
Author	f(%)	σ
Galam S	2.94	12.03
Crokidakis N	1.76	8.88
Sznajd-Weron K	1.76	9.71
San Miguel M	1.68	8.13
Holyst JA	1.43	6.61
Kulakowski K	1.43	5.25
Baronchelli A	1.34	7.76
Liu Y	1.34	3.35
Castellano C	1.26	6.90
Eguiluz VM	1.18	6.09

Reference	f(%)	σ
Castellano C, 2009, REV MOD PHYS, 81, 591	69.52	44.52
Sznajd-Weron K, 2000, INT J MOD PHYS C, 11, 1157	28.21	37.64
Axelrod R, 1997, J CONFLICT RESOLUT, 41, 203	17.38	29.12
Deffuant G, 2001, ADV COMPLEX SYST, 3, 87	12.51	26.01
Deffuant G, 2000, APPLICATIONS OF SIMULATION TO SOCIAL SCIENCES	12.43	25.03
Galam S, 2002, EUR PHYS J B, 25, 403	12.26	25.27
Clifford P, 1973, BIOMETRIKA, 60, 581	11.67	24.94
Watts DJ, 1998, NATURE, 393, 440	11.00	-1.24
Holley RA, 1975, ANN PROBAB, 3, 643	10.83	23.26
Sood V, 2005, PHYS REV LETT, 94, 0	10.24	20.90
Krapivsky PL, 2003, PHYS REV LETT, 90, 0	10.08	21.41
Galam S, 2008, INT J MOD PHYS C, 19, 409	9.57	21.67
Barabasi AL, 1999, SCIENCE, 286, 509	9.32	-3.93
Lorenz J, 2007, INT J MOD PHYS C, 18, 1819	9.32	22.62
Castellano C, 2000, PHYS REV LETT, 85, 3536	8.48	20.20
Galam S, 2004, PHYSICA A, 333, 453	8.31	20.23
Klemm K, 2003, PHYS REV E, 67, 0	7.81	19.00
Albert R, 2002, REV MOD PHYS, 74, 47	7.72	-3.18
Galam S, 2012, UNDERST COMPLEX SYST	7.22	18.38
Galam S, 2007, PHYSICA A, 381, 366	7.14	18.95
RefJournal	f(%)	σ
PHYS REV E	75.90	11.65
REV MOD PHYS	74.81	31.49
PHYSICA A	66.33	9.66
PHYS REV LETT	59.87	8.17
INT J MOD PHYS C	53.06	35.39
EUR PHYS J B	48.95	12.56
NATURE	36.78	-6.11
P NATL ACAD SCI USA	34.17	-2.04
J STAT MECH-THEORY E	30.98	15.37
SCIENCE	30.56	-3.70
Subject	f(%)	σ
Physics, Mathematical	37.28	8.43
Physics, Multidisciplinary	34.34	-11.02
Physics, Fluids & Plasmas	17.97	5.66
Multidisciplinary Sciences	11.00	14.18
Computer Science, Interdisciplinary Applications	7.89	6.42
Mathematics, Interdisciplinary Applications	5.79	2.72
Mechanics	5.29	2.74
Mathematics, Applied	4.87	-1.47
Physics, Condensed Matter	4.70	-1.60
Automation & Control Systems	3.27	11.15

Cluster 4 ("CONSENSUS"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
900	1596	Castellano C, 2009, REV MOD PHYS(81)	Statistical physics of social dynamics
4	748	Sznajd-Weron K, 2000, INT J MOD PHYS C(11)	Opinion evolution in closed community
168	259	Holme P, 2006, PHYS REV E(74)	Nonequilibrium phase transition in the coevolution of networks and opinions
3	244	Galam S, 2002, EUR PHYS J B(25)	Minority opinion spreading in random geometry
223	240	Lorenz J, 2007, INT J MOD PHYS C(18)	Continuous opinion dynamics under bounded confidence: A survey
8	196	Castellano C, 2000, PHYS REV LETT(85)	Nonequilibrium phase transition in a model for social influence
141	182	Galam S, 2008, INT J MOD PHYS C(19)	Sociophysics: A review of Galam models
9	168	Baronchelli A, 2006, J STAT MECH-THEORY E()	Sharp transition towards shared vocabularies in multi-agent systems
19	140	Galam S, 1997, PHYSICA A(238)	Rational group decision making: A random field Ising model at T=O
242	136	Kozma B, 2008, PHYS REV E(77)	Consensus formation on adaptive networks
261	126	Slanina F, 2003, EUR PHYS J B(35)	Analytical results for the Sznajd model of opinion formation
207	121	Xie J, 2011, PHYS REV E(84)	Social consensus through the influence of committed minorities
294	114	Acemoglu D, 2013, MATH OPER RES(38)	Opinion Fluctuations and Disagreement in Social Networks
203	104	Galam S, 2005, EUROPHYS LETT(70)	Local dynamics vs. social mechanisms: A unifying frame

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
900	1596	Castellano C, 2009, REV MOD PHYS(81)	Statistical physics of social dynamics
632	3	Baronchelli A, 2018, ROY SOC OPEN SCI(5)	The emergence of consensus: a primer
597	6	Dong YC, 2018, INFORM FUSION(43)	A survey on the fusion process in opinion dynamics
561	10	Mobilia M, 2013, J STAT PHYS(151)	Commitment Versus Persuasion in the Three-Party Constrained Voter Model
513	56	Nyczka P, 2013, J STAT PHYS(151)	Anticonformity or Independence?-Insights from Statistical Physics
513	0	Proskurnikov AV, 2018, ANNU REV CONTROL(45)	A tutorial on modeling and analysis of dynamic social networks. Part II
498	2	Meng XF, 2018, PHYS REV E(97)	Opinion formation and distribution in a bounded-confidence model on various networks
489	8	Slanina F, 2011, EUR PHYS J B(79)	Dynamical phase transitions in Hegselmann-Krause model of opinion dynamics and consensus
476	4	Balankin AS, 2011, PHYSICA A(390)	Effect of initial concentration and spatial heterogeneity of active agent distribution on opinion dynamics
469	14	Mobilia M, 2011, EPL-EUROPHYS LETT(95)	Fixation and polarization in a three-species opinion dynamics model
466	3	Gambra MB, 2011, EUR PHYS J B(83)	Social dynamics with peer support on heterogeneous networks The "mafia model"
445	41	Yang HX, 2009, PHYS REV E(80)	Effects of social diversity on the emergence of global consensus in opinion dynamics
435	0	Vieira AR, 2018, PHYS REV E(97)	Threshold q-voter model
433	34	Sun ZL, 2013, ENVIRON MODELL SOFTW(45)	A framework for modeling payments for ecosystem services with agent-based models, Bayesian belief networks and opinion...

Cluster 4 ("CONSENSUS"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Castellano C	15	2151	2882
Loreto V	12	2020	2013
Fortunato S	8	1837	1702
Galam S	35	1338	3981
Sznajd-Weron K	21	1050	3095
Sznajd J	2	748	43
San Miguel M	20	518	2804
Baronchelli A	16	507	2364
Holyst JA	17	478	1268
Eguiluz VM	14	354	1996
Steels L	3	312	155
Redner S	8	287	435
Deffuant G	5	278	307
Holme P	5	269	805
Lorenz J	3	261	541
Newman MEJ	1	259	168
Gonzalez-Avella JC	10	253	1548
Martins ACR	13	249	2536
Marsili M	4	241	327

Most Representative Authors

Author	N_a	TC_a	k_a
Liu Y	16	152	4299
Crokidakis N	21	224	4123
Galam S	35	1338	3981
Sznajd-Weron K	21	1050	3095
Xiong F	12	90	3028
Castellano C	15	2151	2882
San Miguel M	20	518	2804
Martins ACR	13	249	2536
Anteneodo C	9	108	2395
Baronchelli A	16	507	2364
Toral R	12	205	2129
Loreto V	12	2020	2013
Wang BH	9	84	2002
Eguiluz VM	14	354	1996
Yang HX	7	68	1962
Stanley HE	6	145	1818
Mobilia M	5	64	1802
Pastor-Satorras R	9	179	1795
Javarone MA	11	64	1786

Cluster 3 ("EVOLUTIONARY GAMES"). This cluster contains $N = 640$ publications.

Keywords	f(%)	σ
DYNAMICS	36.25	7.05
COOPERATION	30.63	33.89
EVOLUTIONARY GAMES	28.44	37.28
EMERGENCE	26.88	25.93
SOCIAL DILEMMAS	24.69	35.38
PRISONERS-DILEMMA GAME	17.34	29.51
NETWORKS	16.41	6.87
COMPLEX NETWORKS	16.09	0.54
GRAPHS	15.78	19.72
EVOLUTION	14.37	8.06
SOCIAL NETWORKS	12.97	4.72
PRISONERS-DILEMMA	12.81	24.98
SNOWDRIFT GAME	12.50	24.83
PUBLIC-GOODS GAMES	11.88	24.55
BEHAVIOR	11.41	3.81
POPULATIONS	10.62	19.21
SCALE-FREE NETWORKS	10.00	10.55
GAMES	9.06	17.34
SELECTION	8.59	16.56
INDIRECT RECIPROCITY	8.28	20.62
Title Words	f(%)	σ
COOPERATION	41.25	52.98
GAME	25.47	30.18
DILEMMA	19.84	34.92
GAMES	19.84	30.38
SPATIAL	19.53	29.74
EVOLUTIONARY	19.22	29.52
SOCIAL	17.97	2.22
NETWORKS	17.50	-0.48
PRISONERS	17.50	34.21
EVOLUTION	13.44	15.51
Journal	f(%)	σ
PHYS REV E	21.56	8.25
PHYSICA A	19.53	-3.17
CHAOS SOLITON FRACT	9.84	13.90
EPL-EUROPHYS LETT	7.66	8.92
NEW J PHYS	6.09	8.89
J STAT MECH-THEORY E	4.22	3.13
EUR PHYS J B	4.06	2.15
INT J MOD PHYS C	1.88	-1.55
PHYS LETT A	1.88	2.17
PHYS REV LETT	1.88	1.34

Institution	f(%)	σ
DEPT PHYS	17.81	2.46
PEKING UNIV	9.84	17.82
UNIV MARIBOR	9.69	22.43
COLL ENGN	9.38	21.11
FAC NAT SCI & MATH	9.38	22.36
CTR SYST & CONTROL	8.75	23.15
STATE KEY LAB TURBULENCE & COMPLEX SYST	6.56	19.83
HUNGARIAN ACAD SCI	6.25	16.25
INST TECH PHYS & MAT SCI	6.09	19.60
DEPT MATH	5.31	1.33
UNIV ZARAGOZA	5.00	9.43
MINIST EDUC	4.53	6.96
UNIV SCI & TECHNOL CHINA	4.22	5.83
XIDIAN UNIV	4.22	9.66
TIANJIN UNIV TECHNOL	3.91	13.46
INTERDISCIPLINARY GRAD SCH ENGN SCI	3.59	12.25
RES CTR NAT SCI	3.59	14.89
KYUSHU UNIV	3.44	10.09
HARVARD UNIV	3.28	6.73
DEPT FIS	3.12	0.81
Country	f(%)	σ
Peoples R China	55.16	17.24
USA	13.28	-4.42
Slovenia	9.69	19.36
Hungary	9.38	12.16
Spain	7.19	2.11
Japan	6.72	2.59
Germany	4.84	-2.09
Switzerland	4.06	1.90
Italy	3.75	-3.78
UK	3.44	-3.77
Author	f(%)	σ
Wang L	12.50	24.66
Perc M	9.69	23.74
Szolnoki A	7.81	22.89
Wang Z	5.94	15.41
Chen XJ	3.91	16.16
Fu F	3.44	14.76
Tanimoto J	3.28	12.45
Wu T	3.28	14.03
Wang BH	2.81	6.53
Wang J	2.81	8.52

Reference	f(%)	σ
Nowak MA, 1992, NATURE, 359, 826	57.81	60.78
Szabo G, 2007, PHYS REP, 446, 97	57.34	57.75
Santos FC, 2005, PHYS REV LETT, 95, 0	43.75	52.99
Nowak MA, 2006, SCIENCE, 314, 1560	40.16	50.68
Perc M, 2010, BIOSYSTEMS, 99, 109	38.12	46.66
Szabo G, 1998, PHYS REV E, 58, 69	36.41	47.93
Axelrod Robert, 1984, EVOLUTION COOPERATIO	32.66	43.90
Hofbauer J, 1998, EVOLUTIONARY GAMES P	32.34	44.22
Nowak MA, 2006, EVOLUTIONARY DYNAMIC	32.34	43.77
Santos FC, 2006, P NATL ACAD SCI USA, 103, 3490	28.59	43.01
Santos FC, 2008, NATURE, 454, 213	28.59	42.74
Smith JMaynard, 1982, EVOLUTION THEORY GAM	27.66	41.47
Hauert C, 2004, NATURE, 428, 643	27.19	41.61
Axelrod R, 1981, SCIENCE, 211, 1390	23.59	37.60
Ohtsuki H, 2006, NATURE, 441, 502	23.59	37.07
Barabasi AL, 1999, SCIENCE, 286, 509	23.28	7.56
Perc M, 2008, PHYS REV E, 77, 0	22.81	38.02
Gomez-Gardenes J, 2007, PHYS REV LETT, 98, 0	21.56	35.33
Perc M, 2013, J R SOC INTERFACE, 10, 0	21.56	35.47
Roca CP, 2009, PHYS LIFE REV, 6, 208	18.59	34.24
RefJournal	f(%)	σ
PHYS REV E	91.88	16.77
NATURE	89.22	22.16
SCIENCE	82.34	24.63
PHYS REV LETT	78.75	15.55
P NATL ACAD SCI USA	77.97	21.45
J THEOR BIOL	73.28	45.42
PHYS REP	65.62	27.76
PHYSICA A	63.28	5.54
NEW J PHYS	59.06	29.86
EPL-EUROPHYS LETT	58.44	25.11
Subject	f(%)	σ
Physics, Multidisciplinary	56.25	3.01
Physics, Mathematical	44.06	10.07
Physics, Fluids & Plasmas	23.28	8.21
Mathematics, Interdisciplinary Applications	12.03	9.86
Mechanics	6.25	3.28
Physics, Condensed Matter	5.00	-0.85
Mathematics, Applied	4.84	-1.10
Multidisciplinary Sciences	2.81	-0.91
Computer Science, Interdisciplinary Applications	2.19	-2.51
Physics, Applied	2.03	-9.62

Cluster 3 ("EVOLUTIONARY GAMES"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
573	1463	Szabo G, 2007, PHYS REP(446)	Evolutionary games on graphs
586	936	Perc M, 2010, BIOSYSTEMS(99)	Coevolutionary games-A mini review
529	515	Perc M, 2013, J R SOC INTERFACE(10)	Evolutionary dynamics of group interactions on structured populations: a review
487	389	Perc M, 2008, PHYS REV E(77)	Social diversity and promotion of cooperation in the spatial prisoner's dilemma game
87	339	Abramson G, 2001, PHYS REV E(63)	Social games in a social network
327	332	Gomez-Gardenes J, 2007, PHYS REV LETT(98)	Dynamical organization of cooperation in complex topologies
528	261	Wang Z, 2015, EUR PHYS J B(88)	Evolutionary games on multilayer networks: a colloquium
377	249	Traulsen A, 2006, PHYS REV E(74)	Stochastic dynamics of invasion and fixation
440	213	Wang Z, 2012, EPL-EUROPHYS LETT(97)	Evolution of public cooperation on interdependent networks: The impact of biased utility functions
492	209	Wang Z, 2013, SCI REP-UK(3)	Interdependent network reciprocity in evolutionary games
162	205	Zimmermann MG, 2005, PHYS REV E(72)	Cooperation, social networks, and the emergence of leadership in a prisoner's dilemma with adaptive local interactions
456	170	Szolnoki A, 2008, PHYSICA A(387)	Towards effective payoffs in the prisoner's dilemma game on scale-free networks
450	162	Szolnoki A, 2009, EPL-EUROPHYS LETT(86)	Resolving social dilemmas on evolving random networks
584	161	Perc M, 2017, PHYS REP(687)	Statistical physics of human cooperation

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
586	936	Perc M, 2010, BIOSYSTEMS(99)	Coevolutionary games-A mini review
584	161	Perc M, 2017, PHYS REP(687)	Statistical physics of human cooperation
573	1463	Szabo G, 2007, PHYS REP(446)	Evolutionary games on graphs
567	3	Du FQ, 2013, CHAOS SOLITON FRACT(56)	Quantifying the impact of noise on macroscopic organization of cooperation in spatial games
558	6	Zschaler G, 2012, EUR PHYS J-SPEC TOP(211)	Adaptive-network models of collective dynamics
543	95	Perc M, 2013, CHAOS SOLITON FRACT(56)	Collective behavior and evolutionary games - An introduction
536	34	Fu F, 2013, J STAT PHYS(151)	Global Migration Can Lead to Stronger Spatial Selection than Local Migration
535	1	Wang L, 2018, PHYSICA A(490)	The role of emotions in spatial prisoner's dilemma game with voluntary participation
529	515	Perc M, 2013, J R SOC INTERFACE(10)	Evolutionary dynamics of group interactions on structured populations: a review
528	261	Wang Z, 2015, EUR PHYS J B(88)	Evolutionary games on multilayer networks: a colloquium
527	17	Wu ZX, 2014, PHYS REV E(89)	Social dilemma alleviated by sharing the gains with immediate neighbors
526	119	Fu F, 2009, PHYS REV E(79)	Partner switching stabilizes cooperation in coevolutionary prisoner's dilemma
526	1	Jin JH, 2018, CHAOS SOLITON FRACT(106)	Heterogeneous fitness promotes cooperation in the spatial prisoner's dilemma game
520	5	Su Q, 2017, NEW J PHYS(19)	Evolutionary dynamics under interactive diversity

Cluster 3 ("EVOLUTIONARY GAMES"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Perc M	62	5574	27272
Szolnoki A	50	4820	21755
Wang L	81	2127	33317
Szabo G	14	2094	5003
Wang Z	40	1813	16854
Gomez-Gardenes J	17	1658	6490
Moreno Y	14	1497	5701
Fath G	1	1463	573
Floria LM	7	1110	2746
Fu F	22	1012	9365
Chen XJ	25	572	9854
Nowak MA	7	539	2805
Wu T	21	510	9288
Traulsen A	5	471	2039
Pacheco JM	10	471	3191
Wang WX	9	453	2960
Xia CY	18	435	8165
Wu ZX	18	423	6960
Wang J	18	376	7699

Most Representative Authors

Author	N_a	TC_a	k_a
Wang L	81	2127	33317
Perc M	62	5574	27272
Szolnoki A	50	4820	21755
Wang Z	40	1813	16854
Chen XJ	25	572	9854
Fu F	22	1012	9365
Wu T	21	510	9288
Xia CY	18	435	8165
Wang J	18	376	7699
Wu ZX	18	423	6960
Wang BH	18	292	6583
Gomez-Gardenes J	17	1658	6490
Moreno Y	14	1497	5701
Tanimoto J	21	350	5253
Szabo G	14	2094	5003
Sanchez A	14	306	4979
Yang HX	13	160	4947
Li Z	11	91	4524
Rong ZH	9	195	4130

Cluster 13 ("MODULARITY"). This cluster contains $N = 299$ publications.

Keywords	f(%)	σ
COMPLEX NETWORKS	41.14	12.39
SOCIAL NETWORKS	22.41	9.27
COMMUNITY STRUCTURE	18.39	18.82
MODULARITY	13.71	26.39
DYNAMICS	11.71	-5.08
ALGORITHM	9.03	13.44
MODEL	9.03	-2.02
ORGANIZATION	8.36	8.62
NETWORKS	6.69	-1.25
EVOLUTION	6.35	-0.11
METABOLIC NETWORKS	6.35	11.28
WEB	5.02	4.53
MODELS	4.68	0.58
CENTRALITY	4.01	3.32
GRAPHS	4.01	1.22
IDENTIFICATION	4.01	5.61
SYSTEMS	4.01	-1.78
PREDICTION	3.34	5.50
OPTIMIZATION	2.68	4.54
STOCHASTIC BLOCKMODELS	2.68	10.94
Title Words	f(%)	σ
NETWORKS	57.86	17.74
COMMUNITY	36.79	39.48
DETECTION	26.42	37.28
STRUCTURE	17.06	15.03
COMMUNITIES	15.72	24.05
SOCIAL	15.38	0.26
COMPLEX	14.72	6.65
BASED	12.04	5.96
ALGORITHM	9.70	14.23
NETWORK	9.03	1.44
Journal	f(%)	σ
PHYSICA A	28.09	1.25
PHYS REV E	18.06	3.72
J STAT MECH-THEORY E	5.35	3.44
EUR PHYS J B	5.02	2.49
MOD PHYS LETT B	3.34	7.84
ENTROPY-SWITZ	3.01	2.24
EPL-EUROPHYS LETT	3.01	0.78
NEW J PHYS	3.01	1.87
CHAOS	2.68	2.43
INT J MOD PHYS B	2.68	3.99

Institution	f(%)	σ
DEPT PHYS	11.04	-1.66
DEPT COMP SCI	6.69	5.49
MINIST EDUC	6.02	6.99
XIDIAN UNIV	5.35	8.79
COLL COMP SCI & TECHNOL	4.68	10.17
DEPT MATH	4.68	0.37
SCH COMP SCI & TECHNOL	4.35	8.18
UNIV OXFORD	4.01	5.92
KEY LAB INTELLIGENT PERCEPT & IMAGE UNDERSTANDING	3.68	11.96
CENT UNIV FINANCE & ECON	2.68	11.04
DEPT COMP SCI & ENGN	2.68	5.09
OXFORD CTR IND & APPL MATH	2.68	10.12
SCH COMP SCI	2.68	5.18
SCH MANAGEMENT SCI & ENGN	2.68	8.46
AALTO UNIV	2.34	2.61
CABDYN COMPLEX CTR	2.34	7.07
ISI FDN	2.34	5.68
SANTA FE INST	2.34	2.18
SCH COMP SCI & ENGN	2.34	4.75
UNIV FRIBOURG	2.34	3.02
Country	f(%)	σ
Peoples R China	44.15	7.41
USA	23.41	1.33
UK	12.37	3.36
Italy	8.36	0.40
Spain	7.02	1.31
Finland	3.34	2.98
Germany	3.34	-2.45
Switzerland	3.34	0.55
Canada	2.68	1.34
France	2.68	-1.37
Author	f(%)	σ
Porter MA	3.01	10.42
Jiao LC	2.34	11.41
Mucha PJ	2.34	10.20
Li HJ	2.01	8.65
Wu JS	2.01	7.21
Arenas A	1.67	4.72
Kaski K	1.67	3.54
Liu J	1.67	5.65
Newman MEJ	1.67	4.30
Fortunato S	1.34	4.02

Reference	f(%)	σ
Newman MEJ, 2004, PHYS REV E, 69, 0	56.86	51.68
Girvan M, 2002, P NATL ACAD SCI USA, 99, 7821	54.52	41.88
Fortunato S, 2010, PHYS REP, 486, 75	42.47	40.73
Zachary WW, 1977, J ANTHROPOL RES, 33, 452	33.44	39.38
Newman MEJ, 2006, P NATL ACAD SCI USA, 103, 8577	31.44	39.55
Blondel VD, 2008, J STAT MECH-THEORY E	29.43	40.14
Palla G, 2005, NATURE, 435, 814	28.76	36.14
Fortunato S, 2007, P NATL ACAD SCI USA, 104, 36	25.42	40.62
Newman MEJ, 2006, PHYS REV E, 74, 0	25.08	32.35
Lancichinetti A, 2008, PHYS REV E, 78, 0	21.74	34.48
Danon L, 2005, J STAT MECH-THEORY E	21.40	36.34
Watts DJ, 1998, NATURE, 393, 440	20.07	4.17
Clauset A, 2004, PHYS REV E, 70, 0	19.40	30.77
Rosvall M, 2008, P NATL ACAD SCI USA, 105, 1118	19.40	30.98
Guimera R, 2005, NATURE, 433, 895	17.73	30.49
Lusseau D, 2003, BEHAV ECOL SOCIOBIOL, 54, 396	16.39	27.43
Radicchi F, 2004, P NATL ACAD SCI USA, 101, 2658	15.38	26.67
Clauset A, 2008, NATURE, 453, 98	15.05	22.85
Lancichinetti A, 2009, NEW J PHYS, 11, 0	15.05	31.10
Lancichinetti A, 2009, PHYS REV E, 80, 0	14.38	29.33
RefJournal	f(%)	σ
PHYS REV E	90.30	10.91
P NATL ACAD SCI USA	86.62	17.76
NATURE	74.92	10.18
J STAT MECH-THEORY E	57.19	20.37
PHYSICA A	55.52	1.10
PHYS REP	55.18	14.54
PHYS REV LETT	50.17	0.74
SCIENCE	47.49	4.26
EUR PHYS J B	39.80	2.90
J ANTHROPOL RES	34.11	39.50
Subject	f(%)	σ
Physics, Multidisciplinary	49.50	-0.28
Physics, Mathematical	40.13	5.34
Physics, Fluids & Plasmas	19.06	3.41
Physics, Condensed Matter	11.37	4.14
Physics, Applied	9.03	-3.27
Mechanics	6.35	2.34
Mathematics, Applied	4.01	-1.37
Mathematics, Interdisciplinary Applications	3.01	-1.03
Computer Science, Information Systems	2.01	1.99
Computer Science, Interdisciplinary Applications	2.01	-1.87

Cluster 13 ("MODULARITY"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
261	3523	Fortunato S, 2010, PHYS REP(486)	Community detection in graphs
140	888	Newman MEJ, 2004, EUR PHYS J B(38)	Detecting community structure in networks
202	842	Raghavan UN, 2007, PHYS REV E(76)	Near linear time algorithm to detect community structures in large-scale networks
170	312	Lancichinetti A, 2009, PHYS REV E(80)	Benchmarks for testing community detection algorithms on directed and weighted graphs with overlapping communities
151	282	De Domenico M, 2013, PHYS REV X(3)	Mathematical Formulation of Multilayer Networks
202	257	Arenas A, 2008, NEW J PHYS(10)	Analysis of the structure of complex networks at different resolution levels
229	239	Newman MEJ, 2012, NAT PHYS(8)	Communities, modules and large-scale structure in networks
135	182	Decelle A, 2011, PHYS REV E(84)	Asymptotic analysis of the stochastic block model for modular networks and its algorithmic applications
154	149	Nepusz T, 2008, PHYS REV E(77)	Fuzzy communities and the concept of bridgeness in complex networks
197	138	Bassett DS, 2013, CHAOS(23)	Robust detection of dynamic community structure in networks
144	129	Traud AL, 2012, PHYSICA A(391)	Social structure of Facebook networks
180	129	Traag VA, 2009, PHYS REV E(80)	Community detection in networks with positive and negative links
97	127	Kumpula JM, 2007, PHYS REV LETT(99)	Emergence of communities in weighted networks
243	126	Fortunato S, 2016, PHYS REP(659)	Community detection in networks: A user guide

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
261	3523	Fortunato S, 2010, PHYS REP(486)	Community detection in graphs
243	126	Fortunato S, 2016, PHYS REP(659)	Community detection in networks: A user guide
229	239	Newman MEJ, 2012, NAT PHYS(8)	Communities, modules and large-scale structure in networks
223	1	Liu JA, 2010, J STAT MECH-THEORY E()	Coarse-grained diffusion distance for community structure detection in complex networks
218	66	Peixoto TP, 2014, PHYS REV X(4)	Hierarchical Block Structures and High-Resolution Model Selection in Large Networks
217	9	Wu JS, 2013, PHYSICA A(392)	Phase transition model for community detection
215	11	Subelj L, 2014, PHYSICA A(397)	Group detection in complex networks: An algorithm and comparison of the state of the art
213	0	Yang JX, 2017, INT J MOD PHYS B(31)	A spectral method to detect community structure based on distance modularity matrix
211	9	Badie R, 2013, PHYSICA A(392)	An efficient agent-based algorithm for overlapping community detection using nodes' closeness
209	4	Toth B, 2013, J STAT PHYS(151)	Overlapping Modularity at the Critical Point of k-Clique Percolation
208	46	Li HJ, 2015, PHYS REV E(91)	Social significance of community structure: Statistical view
208	4	Li HJ, 2012, EUR PHYS J B(85)	Identifying overlapping communities in social networks using multi-scale local information expansion
207	20	Zhang SQ, 2012, PHYS REV E(85)	Community identification in networks with unbalanced structure
207	10	Jia SW, 2014, IET SYST BIOL(8)	Anti-triangle centrality-based community detection in complex networks

Cluster 13 ("MODULARITY"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Fortunato S	4	3974	768
Newman MEJ	5	1191	575
Albert R	3	868	342
Kumara S	1	842	202
Raghavan UN	1	842	202
Porter MA	9	759	1529
Arenas A	5	638	654
Gomez S	3	560	489
Mucha PJ	7	462	1222
Lancichinetti A	2	374	318
De Domenico M	3	351	418
Cozzo E	2	283	178
Moreno Y	2	283	178
Kivela M	1	282	151
Sole-Ribalta A	2	282	240
Fernandez A	1	257	202
Zdeborova L	3	225	331
Kaski K	5	215	596
Moore C	3	200	344

Most Representative Authors

Author	N_a	TC_a	k_a
Porter MA	9	759	1529
Mucha PJ	7	462	1222
Jiao LC	7	74	1190
Wu JS	6	67	1052
Liu J	5	45	815
Fortunato S	4	3974	768
Li HJ	6	73	691
Arenas A	5	638	654
Kaski K	5	215	596
Newman MEJ	5	1191	575
Subelj L	3	31	552
Bajec M	3	31	552
Zhang ZY	4	10	512
Saramaki J	4	198	496
Gomez S	3	560	489
Peixoto TP	4	112	461
Chen DB	3	7	456
Sales-Pardo M	4	54	437
De Domenico M	3	351	418

Cluster 26 ("SOCIAL FORCE MODEL"). This cluster contains $N = 279$ publications.

Keywords	f(%)	σ
DYNAMICS	34.77	4.08
SIMULATION	25.45	28.65
SOCIAL FORCE MODEL	25.45	38.22
BEHAVIOR	21.51	8.94
FLOW	17.20	22.51
MODEL	12.19	-0.38
SYSTEMS	11.11	3.07
EVACUATION	9.68	23.20
CELLULAR-AUTOMATON	8.24	20.86
JAMMING TRANSITION	7.53	20.34
PEDESTRIAN DYNAMICS	7.53	20.34
ANIMAL GROUPS	6.45	16.87
CELLULAR-AUTOMATON MODEL	6.09	17.65
MOTION	5.38	12.66
PHASE-TRANSITION	5.38	7.35
CROWD	4.30	13.93
ESCAPE	4.30	15.08
PARTICLES	4.30	13.44
PHYSICS	4.30	2.18
CROWD DYNAMICS	3.94	14.38
Title Words	f(%)	σ
MODEL	29.03	7.76
PEDESTRIAN	28.67	45.22
EVACUATION	20.79	38.51
SOCIAL	17.56	1.27
DYNAMICS	16.85	4.46
FLOW	11.47	19.01
CROWD	9.32	25.18
SIMULATION	8.96	13.25
FORCE	8.24	22.16
COLLECTIVE	6.81	7.88
Journal	f(%)	σ
PHYSICA A	33.33	3.23
PHYS REV E	15.77	2.39
CHINESE PHYS B	4.66	10.60
EUR PHYS J B	3.58	0.93
PHYS LETT A	2.51	2.49
EUR PHYS J-SPEC TOP	2.15	1.40
J STAT MECH-THEORY E	2.15	-0.21
INT J MOD PHYS C	1.79	-1.10
PHYS REV LETT	1.79	0.76
SIAM J APPL DYN SYST	1.79	6.41

Institution	f(%)	σ
UNIV SCI & TECHNOL CHINA	7.89	8.97
DEPT MATH	7.17	2.42
DEPT PHYS	6.81	-3.61
BEIJING JIAOTONG UNIV	5.38	7.86
STATE KEY LAB FIRE SCI	4.30	16.80
DEPT FIS	3.58	1.02
CNRS	3.23	1.54
DEPT CIVIL ENGN	3.23	7.94
SCH MANAGEMENT	3.23	2.50
HONG KONG	2.87	4.20
STATE KEY LAB RAIL TRAFF CONTROL & SAFETY	2.87	12.69
SCH ECON & MANAGEMENT	2.51	2.24
SCH ELECT & INFORMAT ENGN	2.51	3.34
SCH SCI	2.51	0.66
BEIHANG UNIV	2.15	2.22
DEPT MECH & AEROSP ENGN	2.15	8.06
EOTVOS LORAND UNIV	2.15	3.71
FAC CIENCIAS EXACTAS & NAT	2.15	4.61
INST THEORET PHYS	2.15	-0.24
INTERDISCIPLINARY GRAD SCH ENGN SCI	2.15	4.40
Country	f(%)	σ
Peoples R China	38.35	4.94
USA	20.79	0.20
Germany	9.68	1.80
Japan	8.96	3.50
France	5.02	0.61
Italy	4.66	-1.93
UK	3.94	-2.17
Argentina	3.58	2.56
India	3.23	1.03
Hungary	2.87	0.70
Author	f(%)	σ
Song WG	3.58	16.23
Helbing D	2.87	6.47
Dong HR	2.51	13.58
Jiang R	2.51	11.18
Dorso CO	2.15	9.50
Porfiri M	2.15	12.57
Tanimoto J	2.15	5.04
Wang BH	2.15	2.97
Yang XX	2.15	12.57
Hu MB	1.79	7.40

Reference	f(%)	σ
Helbing D, 2000, NATURE, 407, 487	48.03	51.12
Helbing D, 1995, PHYS REV E, 51, 4282	47.31	55.18
Burstedde C, 2001, PHYSICA A, 295, 507	22.94	40.13
Helbing D, 2001, REV MOD PHYS, 73, 1067	17.92	28.70
Vicsek T, 1995, PHYS REV LETT, 75, 1226	17.20	23.14
Castellano C, 2009, REV MOD PHYS, 81, 591	16.85	-0.90
Helbing D, 2007, PHYS REV E, 75, 0	16.13	31.95
Muramatsu M, 1999, PHYSICA A, 267, 487	14.34	31.78
Helbing D, 2005, TRANSPORT SCI, 39, 1	13.62	29.74
Kirchner A, 2002, PHYSICA A, 312, 260	13.62	30.95
Parisi DR, 2009, PHYSICA A, 388, 3600	13.26	30.96
Lakoba TI, 2005, SIMUL-T SOC MOD SIM, 81, 339	12.19	29.22
Hughes RL, 2002, TRANSPORT RES B-METH, 36, 507	11.83	29.23
Kirchner A, 2003, PHYS REV E, 67, 0	11.11	28.33
Couzin ID, 2002, J THEOR BIOL, 218, 1	9.68	24.54
Henderson LF, 1971, NATURE, 229, 381	9.32	24.93
Moussaid M, 2011, P NATL ACAD SCI USA, 108, 6884	9.32	24.46
Helbing D, 2000, PHYS REV LETT, 84, 1240	8.96	24.90
Johansson Anders, 2007, ADV COMPLEX SYST, 10, 271	8.60	24.38
Moussaid M, 2010, PLOS ONE, 5, 0	8.24	23.84
RefJournal	f(%)	σ
PHYS REV E	83.51	8.23
NATURE	71.33	8.63
PHYSICA A	70.97	6.23
PHYS REV LETT	44.44	-1.20
P NATL ACAD SCI USA	36.56	-0.16
REV MOD PHYS	35.84	1.31
J STAT MECH-THEORY E	27.60	5.86
TRANSPORT RES B-METH	24.73	37.65
SCIENCE	23.66	-4.20
PLOS ONE	22.94	1.36
Subject	f(%)	σ
Physics, Multidisciplinary	59.50	3.07
Physics, Mathematical	29.39	1.10
Physics, Fluids & Plasmas	15.77	1.63
Mathematics, Applied	6.81	0.67
Physics, Condensed Matter	5.38	-0.29
Computer Science, Interdisciplinary Applications	2.87	-1.09
Mechanics	2.87	-0.80
Physics, Applied	2.87	-5.97
Engineering, Electrical & Electronic	1.79	-2.02
Mathematics, Interdisciplinary Applications	1.79	-2.01

Cluster 26 ("SOCIAL FORCE MODEL"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
13	1834	HELBING D, 1995, PHYS REV E(51)	SOCIAL FORCE MODEL FOR PEDESTRIAN DYNAMICS
7	1319	Acebron JA, 2005, REV MOD PHYS(77)	The Kuramoto model: A simple paradigm for synchronization phenomena
56	813	Vicsek T, 2012, PHYS REP(517)	Collective motion
5	159	WEIDLICH W, 1991, PHYS REP(204)	PHYSICS AND SOCIAL-SCIENCE - THE APPROACH OF SYNERGETICS
67	141	Song WG, 2006, PHYSICA A(363)	Simulation of evacuation processes using a multi-grid model for pedestrian dynamics
4	125	ten Hagen B, 2011, J PHYS-CONDENS MAT(23)	Brownian motion of a self-propelled particle
86	117	Seyfried A, 2006, PHYSICA A(368)	Basics of modelling the pedestrian flow
78	104	Parisi DR, 2009, PHYSICA A(388)	A modification of the Social Force Model can reproduce experimental data of pedestrian flows in normal conditions
22	103	Parisi DR, 2005, PHYSICA A(354)	Microscopic dynamics of pedestrian evacuation
105	89	Yu W, 2007, PHYS REV E(76)	Modeling crowd turbulence by many-particle simulations
59	82	Guo RY, 2008, PHYSICA A(387)	A mobile lattice gas model for simulating pedestrian evacuation
86	76	Song WG, 2006, PHYSICA A(371)	Evacuation behaviors at exit in CA model with force essentials: A comparison with social force model
82	75	Yu YF, 2007, PHYS REV E(75)	Cellular automaton simulation of pedestrian counter flow considering the surrounding environment
34	70	Parisi DR, 2007, PHYSICA A(385)	Morphological and dynamical aspects of the room evacuation process

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
141	0	Sun Y, 2018, PHYSICA A(505)	Kinetic Monte Carlo simulations of two-dimensional pedestrian flow models
138	0	Kwak J, 2017, PHYS REV E(96)	Jamming transitions induced by an attraction in pedestrian flow
134	34	Chowhury D, 2004, PHASE TRANSIT(77)	Self-organized patterns and traffic flow in colonies of organisms: From bacteria and social insects to vertebrates
131	35	Ha V, 2012, PHYSICA A(391)	Agent-based modeling of a multi-room multi-floor building emergency evacuation
128	11	Wang QL, 2015, CHINESE PHYS B(24)	A new collision avoidance model for pedestrian dynamics
127	17	Dai JC, 2013, PHYSICA A(392)	Simulation of pedestrian counter flow through bottlenecks by using an agent-based model
127	13	Hao QY, 2010, PHYS REV E(82)	Pedestrian flow in a lattice gas model with parallel update
124	59	Karamouzas I, 2014, PHYS REV LETT(113)	Universal Power Law Governing Pedestrian Interactions
124	6	Guo F, 2016, PHYSICA A(462)	An extended cost potential field cellular automata model considering behavior variation of pedestrian flow
123	1	Qu YC, 2018, PHYSICA A(492)	Modeling detour behavior of pedestrian dynamics under different conditions
119	2	Zhao YX, 2017, PHYS LETT A(381)	The self-slowing behavioral mechanism of pedestrians under normal and emergency conditions
118	4	Li XL, 2017, PHYSICA A(487)	Effect of psychological tension on pedestrian counter flow via an extended cost potential field cellular automaton model
117	5	Tian HH, 2015, PHYSICA A(420)	Influence of the exits' configuration on evacuation process in a room without obstacle
116	26	Hao QY, 2011, PHYS REV E(84)	Pedestrian flow dynamics in a lattice gas model coupled with an evolutionary game

Cluster 26 ("SOCIAL FORCE MODEL"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Helbing D	8	2039	169
Molnar P	1	1834	13
Spigler R	1	1319	7
Bonilla LL	1	1319	7
Ritort F	1	1319	7
Acebron JA	1	1319	7
Vicente CJP	1	1319	7
Vicsek T	5	824	129
Zafeiris A	1	813	56
Song WG	10	435	830
Wang BH	6	308	493
Parisi DR	5	303	271
Dorso CO	6	230	212
Weidlich W	3	173	10
Johansson A	2	156	183
Yu YF	2	151	168
Ni SJ	1	141	67
Xu X	1	141	67
Ten Hagen B	1	125	4

Most Representative Authors

Author	N_a	TC_a	k_a
Song WG	10	435	830
Jiang R	7	45	695
Hu MB	5	41	533
Wang BH	6	308	493
Dong HR	7	61	450
Guo N	4	4	405
Jia B	4	30	371
Nishinari K	4	88	344
Yang XX	6	50	322
Kuang H	3	26	312
Shuaib MM	3	13	292
Guo RY	3	103	279
Wang QL	4	55	276
Gong JH	4	26	274
Shen S	4	26	274
Li WH	4	26	274
Yu P	4	26	274
Parisi DR	5	303	271
Ma Y	3	14	264

Cluster 25 ("HEAVY TAILS"). This cluster contains $N = 152$ publications.

Keywords	f(%)	σ
NETWORKS	21.05	5.38
DYNAMICS	19.74	-1.31
PATTERNS	15.79	13.69
SYSTEMS	15.79	4.59
HEAVY TAILS	15.13	22.83
HUMAN DYNAMICS	15.13	22.22
BEHAVIOR	11.84	2.06
HUMAN MOBILITY	9.21	15.95
COMMUNICATION	8.55	7.89
MODEL	7.89	-1.86
RECOMMENDER SYSTEMS	6.58	13.73
BURSTS	5.92	15.54
MEMORY	5.92	6.70
DISTRIBUTIONS	4.61	1.80
MODELS	4.61	0.36
COMPLEX NETWORKS	3.95	-3.90
SOCIAL NETWORKS	3.95	-1.82
TIME	3.95	2.92
DIVERSITY	3.29	2.57
EVOLUTION	3.29	-1.61
Title Words	f(%)	σ
SOCIAL	19.74	1.69
HUMAN	19.08	17.69
DYNAMICS	18.42	3.96
ONLINE	13.82	11.09
NETWORKS	12.50	-1.83
MODEL	9.21	-1.48
MOBILITY	7.24	12.03
RECOMMENDATION	7.24	18.11
PATTERNS	6.58	7.48
SYSTEMS	6.58	2.25
Journal	f(%)	σ
PHYSICA A	30.26	1.51
PHYS REV E	15.79	1.77
EUR PHYS J B	7.89	3.97
INT J MOD PHYS C	4.61	1.25
PLOS ONE	4.61	3.91
EPL-EUROPHYS LETT	3.95	1.32
J STAT MECH-THEORY E	3.95	1.31
PHYS REV LETT	3.29	2.20
CHINESE PHYS LETT	2.63	4.14
ENTROPY-SWITZ	1.97	0.53

Institution	f(%)	σ
DEPT PHYS	25.00	3.72
UNIV ELECT SCI & TECHNOL CHINA	10.53	8.97
WEB SCI CTR	9.21	10.01
RES CTR COMPLEX SYST SCI	8.55	13.58
UNIV FRIBOURG	8.55	10.79
UNIV SHANGHAI SCI & TECHNOL	7.89	11.67
AALTO UNIV	7.24	8.21
DEPT COMP SCI	5.92	3.25
SCH SCI	5.92	3.52
DEPT MATH	5.26	0.62
UNIV SCI & TECHNOL CHINA	5.26	3.92
DEPT MANAGEMENT TECHNOL & ECON	4.61	9.72
DEPT MODERN PHYS	4.61	5.06
DEPT THEORET PHYS	4.61	4.55
SHANGHAI UNIV FINANCE & ECON	4.61	12.32
BIG DATA RES CTR	3.95	5.28
CHINESE ACAD SCI	3.95	3.06
ETH	3.95	4.55
JOZEF STEFAN INST	3.95	10.49
POHANG UNIV SCI & TECHNOL	3.95	8.04
Country	f(%)	σ
Peoples R China	42.76	4.89
Switzerland	15.13	9.17
USA	15.13	-1.59
UK	8.55	0.58
Finland	7.89	6.98
South Korea	7.24	3.67
Italy	5.26	-1.15
Austria	3.95	3.86
Russia	3.95	1.12
Slovenia	3.95	3.03
Author	f(%)	σ
Zhang YC	7.89	12.82
Guo Q	7.24	18.11
Liu JG	7.24	14.56
Zhou T	5.92	8.21
Jo HH	5.26	11.10
Sornette D	5.26	7.68
Tadic B	3.95	13.24
Han XP	3.29	9.93
Wang BH	3.29	3.90
Cimini G	2.63	12.58

Reference	f(%)	σ
Barabasi AL, 2005, NATURE, 435, 207	48.03	39.31
Castellano C, 2009, REV MOD PHYS, 81, 591	27.63	2.73
Vazquez A, 2006, PHYS REV E, 73, 0	26.32	34.71
Gonzalez MC, 2008, NATURE, 453, 779	19.08	18.79
Malmgren RD, 2008, P NATL ACAD SCI USA, 105, 18153	17.11	27.80
Oliveira JG, 2005, NATURE, 437, 1251	17.11	26.80
Goh KI, 2008, EPL-EUROPHYS LETT, 81, 0	15.79	29.08
Brockmann D, 2006, NATURE, 439, 462	13.82	18.17
Karsai M, 2012, SCI REP-UK, 2, 0	13.82	24.94
Song CM, 2010, SCIENCE, 327, 1018	13.82	21.47
Zhou T, 2008, EPL-EUROPHYS LETT, 82, 0	13.16	25.34
Dezso Z, 2006, PHYS REV E, 73, 0	12.50	25.41
Vazquez A, 2007, PHYS REV LETT, 98, 0	12.50	16.64
Eckmann JP, 2004, P NATL ACAD SCI USA, 101, 14333	11.84	17.43
Malmgren RD, 2009, SCIENCE, 325, 1696	11.84	22.34
Zhou T, 2010, P NATL ACAD SCI USA, 107, 4511	11.84	22.34
Lazer D, 2009, SCIENCE, 323, 721	11.18	11.01
Wu Y, 2010, P NATL ACAD SCI USA, 107, 18803	9.87	18.17
Zhou T, 2007, PHYS REV E, 76, 0	9.87	15.86
Radicchi F, 2009, PHYS REV E, 80, 0	9.21	14.36
RefJournal	f(%)	σ
PHYS REV E	75.66	4.10
NATURE	70.39	6.14
PHYSICA A	70.39	4.46
P NATL ACAD SCI USA	65.79	7.34
SCIENCE	57.24	5.54
PHYS REV LETT	55.26	1.78
PLOS ONE	47.37	8.57
EPL-EUROPHYS LETT	46.71	8.57
EUR PHYS J B	38.82	1.81
REV MOD PHYS	37.50	1.40
Subject	f(%)	σ
Physics, Multidisciplinary	50.00	-0.08
Physics, Mathematical	27.63	0.32
Physics, Fluids & Plasmas	15.79	1.21
Physics, Condensed Matter	8.55	1.46
Multidisciplinary Sciences	7.89	2.98
Computer Science, Interdisciplinary Applications	5.26	0.67
Mechanics	3.95	0.11
Computer Science, Information Systems	1.97	1.38
Computer Science, Theory & Methods	1.32	-0.16
Mathematics, Interdisciplinary Applications	1.32	-1.78

Cluster 25 ("HEAVY TAILS"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
41	1032	Song CM, 2010, SCIENCE(327)	Limits of Predictability in Human Mobility
8	317	Batty M, 2012, EUR PHYS J-SPEC TOP(214)	Smart cities of the future
36	174	Iribarren JL, 2009, PHYS REV LETT(103)	Impact of Human Activity Patterns on the Dynamics of Information Diffusion
4	138	Zhang YC, 2007, PHYS REV LETT(99)	Heat conduction process on community networks as a recommendation model
40	70	Petersen AM, 2011, P NATL ACAD SCI USA(108)	Quantitative and empirical demonstration of the Matthew effect in a study of career longevity
53	63	Radicchi F, 2009, PHYS REV E(80)	Human activity in the web
42	54	Min B, 2011, PHYS REV E(83)	Spreading dynamics following bursty human activity patterns
19	52	Csaji BC, 2013, PHYSICA A(392)	Exploring the mobility of mobile phone users
19	51	Hasan S, 2013, J STAT PHYS(151)	Spatiotemporal Patterns of Urban Human Mobility
1	51	Bazzani A, 2010, J STAT MECH-THEORY E()	Statistical laws in urban mobility from microscopic GPS data in the area of Florence
1	46	Sornette D, 2003, PHYSICA A(318)	Endogenous versus exogenous shocks in systems with memory
23	45	Peng CB, 2012, PLOS ONE(7)	Collective Human Mobility Pattern from Taxi Trips in Urban Area
28	45	Yan Q, 2013, PHYSICA A(392)	Social network based microblog user behavior analysis
41	44	Oliveira JG, 2009, PHYSICA A(388)	Impact of interactions on human dynamics

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
85	28	Zhao ZD, 2013, SCI REP-UK(3)	Emergence of scaling in human-interest dynamics
59	4	Kim J, 2013, PLOS ONE(8)	Microscopic Modelling Circadian and Bursty Pattern of Human Activities
59	3	Peng D, 2015, PHYSICA A(436)	Punctuated equilibrium dynamics in human communications
57	9	Jiang ZQ, 2016, J STAT MECH-THEORY E()	Two-state Markov-chain Poisson nature of individual cellphone call statistics
56	4	Guo Q, 2017, PHYSICA A(468)	Evolution properties of online user preference diversity
54	12	Mryglod O, 2015, PHYSICA A(419)	Interevent time distributions of human multi-level activity in a virtual world
53	63	Radicchi F, 2009, PHYS REV E(80)	Human activity in the web
53	26	Saramaki J, 2015, EUR PHYS J B(88)	From seconds to months: an overview of multi-scale dynamics of mobile telephone calls
53	25	Zhou T, 2012, EPL-EUROPHYS LETT(97)	Relative clock verifies endogenous bursts of human dynamics
53	5	Ross GJ, 2015, PHYS REV E(91)	Understanding the heavy-tailed dynamics in human behavior
53	1	Ito H, 2015, PHYS REV E(92)	Universal bursty behavior in the air transportation system
51	5	Panzarasa P, 2015, PHYS REV E(92)	Emergence of long-range correlations and bursty activity patterns in online communication
50	11	Jo HH, 2012, EPJ DATA SCI(1)	Spatiotemporal correlations of handset-based service usages
50	5	Wang CX, 2015, PHYSICA A(428)	Modeling the heterogeneity of human dynamics based on the measurements of influential users in Sina Microblog

Cluster 25 ("HEAVY TAILS"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Song CM	2	1035	86
Qu ZH	1	1032	41
Blumm N	1	1032	41
Barabasi AL	1	1032	41
Bazzani A	3	373	27
Axhausen KW	1	317	8
Portugali Y	1	317	8
Pozdnoukhov A	1	317	8
Ouzounis G	1	317	8
Wachowicz M	1	317	8
Batty M	1	317	8
Giannotti F	1	317	8
Zhang YC	12	211	147
Moro E	2	200	89
Iribarren JL	1	174	36
Yu YK	1	138	4
Blattner M	1	138	4
Zhou T	9	132	243
Sornette D	8	111	220

Most Representative Authors

Author	N_a	TC_a	k_a
Jo HH	8	56	301
Zhou T	9	132	243
Sornette D	8	111	220
Liu JG	11	50	215
Guo Q	11	50	215
Kaski K	4	47	176
Han XP	5	23	158
Wang BH	5	23	158
Yang ZM	3	56	155
Zhang YC	12	211	147
Zhao ZD	2	53	138
Zhang ZK	4	42	112
Lai YC	2	31	111
Perotti JI	3	26	104
Pan RK	3	45	101
Li RD	3	0	96
Zhou CS	2	36	94
Wei ZW	2	6	91
Moro E	2	200	89

Cluster 10 ("INTERTEMPORAL CHOICE"). This cluster contains $N = 87$ publications.

Keywords	f(%)	σ
STRATEGIES	26.44	18.46
DECISION-MAKING	12.64	12.75
DYNAMICS	11.49	-2.79
MECHANICS	10.34	13.38
RISK	10.34	12.29
UNCERTAINTY	9.20	14.35
CHOICE	8.05	11.36
GAMES	8.05	5.56
INTERFERENCE	8.05	19.53
INTERTEMPORAL CHOICE	8.05	22.23
MODEL	8.05	-1.36
INFORMATION	6.90	3.36
EXPLANATION	5.75	12.46
TIME	5.75	3.70
TIME-PERCEPTION	5.75	18.79
TSALLIS STATISTICS	5.75	13.10
BAYESIAN GAMES	4.60	16.80
BELL NONLOCALITY	4.60	16.80
DELAY	4.60	9.89
GAME-THEORY	4.60	11.72
Title Words	f(%)	σ
QUANTUM	57.47	46.86
GAME	11.49	4.05
GAMES	11.49	5.90
INFORMATION	11.49	3.70
MODEL	9.20	-1.12
SOCIAL	9.20	-1.48
INTERTEMPORAL	8.05	24.93
QUANTUM-LIKE	8.05	24.93
THEORY	8.05	3.92
BASED	6.90	0.95
Journal	f(%)	σ
PHYSICA A	40.23	3.29
INT J THEOR PHYS	11.49	23.41
QUANTUM INF PROCESS	9.20	22.64
AIP CONF PROC	4.60	-0.65
ENTROPY-SWITZ	4.60	2.44
FOUND PHYS	4.60	16.81
PHYS REV A	4.60	11.14
INT J QUANTUM INF	3.45	12.55
LECT NOTES COMPUT SC	3.45	6.50
OPEN SYST INF DYN	2.30	6.92

Institution	f(%)	σ
INST PHYS	16.09	9.42
UNIV BIALYSTOK	16.09	29.77
SILESIAN UNIV	13.79	27.81
INST THEORET PHYS	12.64	6.31
UNIV LEICESTER	12.64	19.39
SCH MANAGEMENT	9.20	6.06
DEPT BEHAV SCI	8.05	21.63
INT CTR MATH MODELING PHYS & COGNIT SCI	8.05	24.61
LEICESTER	8.05	21.63
SAPPORO	8.05	15.54
UNIV VAXJO	8.05	22.98
HOKKAIDO UNIV	6.90	13.69
LINNAEUS UNIV	6.90	19.66
UNIV TOKYO	6.90	6.35
DEPT LIFE SCI	5.75	18.94
KITA KU	5.75	14.54
MEGURO KU	5.75	8.89
SCH ARTS & SCI	5.75	20.79
UNIT COGNIT & BEHAV SCI	5.75	20.79
COLL MATH & INFORMAT	4.60	16.59
Country	f(%)	σ
Poland	20.69	7.77
Japan	16.09	5.14
UK	16.09	3.14
Sweden	14.94	10.02
Peoples R China	9.20	-3.48
Belgium	6.90	4.29
USA	6.90	-3.11
Australia	4.60	1.94
Spain	4.60	-0.30
Brazil	3.45	-0.61
Author	f(%)	σ
Piotrowski EW	16.09	31.01
Sladkowski J	14.94	29.62
Haven E	12.64	29.90
Khrennikov A	12.64	28.70
Takahashi T	11.49	26.06
Aerts D	6.90	23.08
Sozzo S	4.60	18.84
Chen KY	3.45	16.32
D'hooghe B	3.45	16.32
Hogg T	3.45	11.41

Reference	f(%)	σ
Eisert J, 1999, PHYS REV LETT, 83, 3077	34.48	44.77
Meyer DA, 1999, PHYS REV LETT, 82, 1052	33.33	46.40
Busemeyer JR, 2006, J MATH PSYCHOL, 50, 220	19.54	37.40
Cajueiro DO, 2006, PHYSICA A, 364, 385	17.24	36.16
Piotrowski EW, 2002, PHYSICA A, 312, 208	14.94	33.66
Eisert J, 2000, J MOD OPTIC, 47, 2543	13.79	31.04
Takahashi T, 2005, MED HYPOTHESES, 65, 691	12.64	30.96
Benjamin SC, 2001, PHYS REV A, 64, 0	11.49	26.89
Du JF, 2002, PHYS REV LETT, 88, 0	11.49	26.89
Piotrowski EW, 2003, INT J THEOR PHYS, 42, 1089	11.49	29.52
Takahashi T, 2006, MED HYPOTHESES, 67, 1372	11.49	29.52
Takahashi T, 2007, PHYSICA A, 385, 637	11.49	29.52
Tversky A, 1992, PSYCHOL SCI, 3, 305	11.49	29.52
Khrennikov A, 2010, UBIQUITOUS QUANTUM STRUCTURE: FROM PSYCHOLOGY TO FINANCE	10.34	24.16
Penrose R, 1994, SHADOWS MIND	10.34	28.00
Piotrowski EW, 2001, ACTA PHYS POL B, 32, 3873	10.34	28.00
Pothos EM, 2009, P R SOC B, 276, 2171	10.34	25.27
Aerts D, 2009, J MATH PSYCHOL, 53, 314	9.20	26.40
Brunner N, 2013, NAT COMMUN, 4, 0	9.20	26.40
Haven E, 2013, QUANTUM SOCIAL SCI	9.20	22.42
RefJournal	f(%)	σ
PHYSICA A	64.37	2.25
PHYS REV LETT	48.28	0.04
PHYS LETT A	44.83	9.85
PHYS REV A	33.33	11.46
INT J THEOR PHYS	31.03	33.68
J MATH PSYCHOL	29.89	19.27
NATURE	22.99	-4.23
REV MOD PHYS	22.99	-1.84
FOUND PHYS	21.84	27.04
ECONOMETRICA	20.69	5.22
Subject	f(%)	σ
Physics, Multidisciplinary	81.61	5.84
Physics, Mathematical	18.39	-1.71
Computer Science, Theory & Methods	8.05	5.10
Physics, Particles & Fields	5.75	4.93
Optics	4.60	2.31
Physics, Atomic, Molecular & Chemical	4.60	3.34
Computer Science, Interdisciplinary Applications	3.45	-0.34
Multidisciplinary Sciences	3.45	-0.01
Statistics & Probability	3.45	3.08
Mechanics	2.30	-0.72

Cluster 10 ("INTERTEMPORAL CHOICE"). Most cited publications (according to Web Of Science) and most representative publications (in term of in-degree d_{in} measuring the number of publications in the cluster that are linked with it) among all publications in the cluster.

Most Cited publications

d_{in}	Times Cited	Publication Ref	Publication Title
24	97	Piotrowski EW, 2003, INT J THEOR PHYS(42)	An invitation to quantum game theory
14	74	Takahashi T, 2008, PHYSICA A(387)	Psychophysics of time perception and intertemporal choice models
2	73	Khrennivov A, 1999, FOUND PHYS(29)	Classical and quantum mechanics on information spaces with applications to cognitive, psychological, social, and...
4	63	Piotrowski EW, 2002, PHYSICA A(312)	Quantum market games
4	52	Khrennikov A, 2004, OPEN SYST INF DYN(11)	On quantum-like probabilistic structure of mental information
14	50	Iqbal A, 2002, PHYS REV A(65)	Backwards-induction outcome in a quantum game
5	40	Cajueiro DO, 2006, PHYSICA A(364)	A note on the relevance of the q-exponential function in the context of intertemporal choices
4	35	Aerts D, 2011, LECT NOTES COMPUT SC(7052)	Quantum Structure in Cognition: Why and How Concepts Are Entangled
15	31	Asano M, 2012, PHYSICA A(391)	Quantum-like dynamics of decision-making
11	30	Takahashi T, 2007, PHYSICA A(385)	A comparison of intertemporal choices for oneself versus someone else based on Tsallis' statistics
17	29	Chen KY, 2002, QUANTUM INF PROCESS(1)	A Quantum Treatment of Public Goods Economics
5	28	Piotrowski EW, 2001, ACTA PHYS POL B(32)	Quantum-like approach to financial risk: Quantum anthropic principle
14	27	Han RK, 2012, PHYSICA A(391)	Psychophysics of time perception and valuation in temporal discounting of gain and loss
11	27	Accardi L, 2009, OPEN SYST INF DYN(16)	Quantum Markov Model for Data from Shafir-Tversky Experiments in Cognitive Psychology

Most Representative Publications

d_{in}	Times Cited	Publication Ref	Publication Title
32	14	Iqbal A, 2015, PHYSICA A(436)	Social optimality in quantum Bayesian games
26	11	Hanauske M, 2007, PHYSICA A(382)	Quantum game theory and open access publishing
24	97	Piotrowski EW, 2003, INT J THEOR PHYS(42)	An invitation to quantum game theory
24	3	Arfi B, 2007, PHYSICA A(374)	Quantum social game theory
23	2	Situ HZ, 2017, INT J QUANTUM INF(15)	Land bidding game with conflicting interest and its quantum solution
21	2	Bang J, 2016, SCI REP-UK(6)	Quantum-mechanical machinery for rational decision-making in classical guessing game
20	9	Hanauske M, 2010, PHYSICA A(389)	Doves and hawks in economics revisited: An evolutionary quantum game theory based analysis of financial crises
18	5	Makowski M, 2015, ENTROPY-SWITZ(17)	Do Transitive Preferences Always Result in Indifferent Divisions?
17	29	Chen KY, 2002, QUANTUM INF PROCESS(1)	A Quantum Treatment of Public Goods Economics
17	24	Piotrowski EW, 2002, PHYSICA A(308)	Quantum bargaining games
17	21	Chen KY, 2006, QUANTUM INF PROCESS(5)	How well do people play a quantum prisoner's dilemma?
17	18	Piotrowski EW, 2005, PHYSICA A(345)	Quantum diffusion of prices and profits
17	7	Piotrowski EW, 2004, INT J QUANTUM INF(2)	Quantum computer: An appliance for playing market games
16	16	Piotrowski EW, 2003, PHYSICA A(318)	Interference of quantum market strategies

Cluster 10 ("INTERTEMPORAL CHOICE"). Most cited and representative authors. For each author, we display the number N_a of publications their authored in that cluster, the sum TC_a of their number of citations (according to Web Of Science), and the sum k_a of their in-degree.

Most Cited Authors

Author	N_a	TC_a	k_a
Sladkowski J	13	331	161
Piotrowski EW	14	325	163
Takahashi T	10	198	116
Khrennikov A	11	177	106
Oono H	2	99	24
Radford MHB	2	99	24
Haven E	11	86	69
Ohya M	3	76	39
Aerts D	6	75	50
Khrennivov A	1	73	2
Iqbal A	2	64	46
Sozzo S	4	58	31
Chen KY	3	57	45
Hogg T	3	57	45
Toor AH	1	50	14
Tanaka Y	2	49	28
Basieva I	2	49	28
Asano M	2	49	28
Khrennikova P	3	40	32

Most Representative Authors

Author	N_a	TC_a	k_a
Piotrowski EW	14	325	163
Sladkowski J	13	331	161
Takahashi T	10	198	116
Khrennikov A	11	177	106
Haven E	11	86	69
Aerts D	6	75	50
Iqbal A	2	64	46
Bernius S	2	20	46
Hanauske M	2	20	46
Chen KY	3	57	45
Hogg T	3	57	45
Situ HZ	3	16	42
Zhang C	3	16	42
Ohya M	3	76	39
Alonso-Sanz R	2	9	36
Li LZ	2	2	36
Khrennikova P	3	40	32
Abbott D	1	14	32
Chappell JM	1	14	32