Complex Systems Science: Dreams Of Universality, Reality Of Interdisciplinarity

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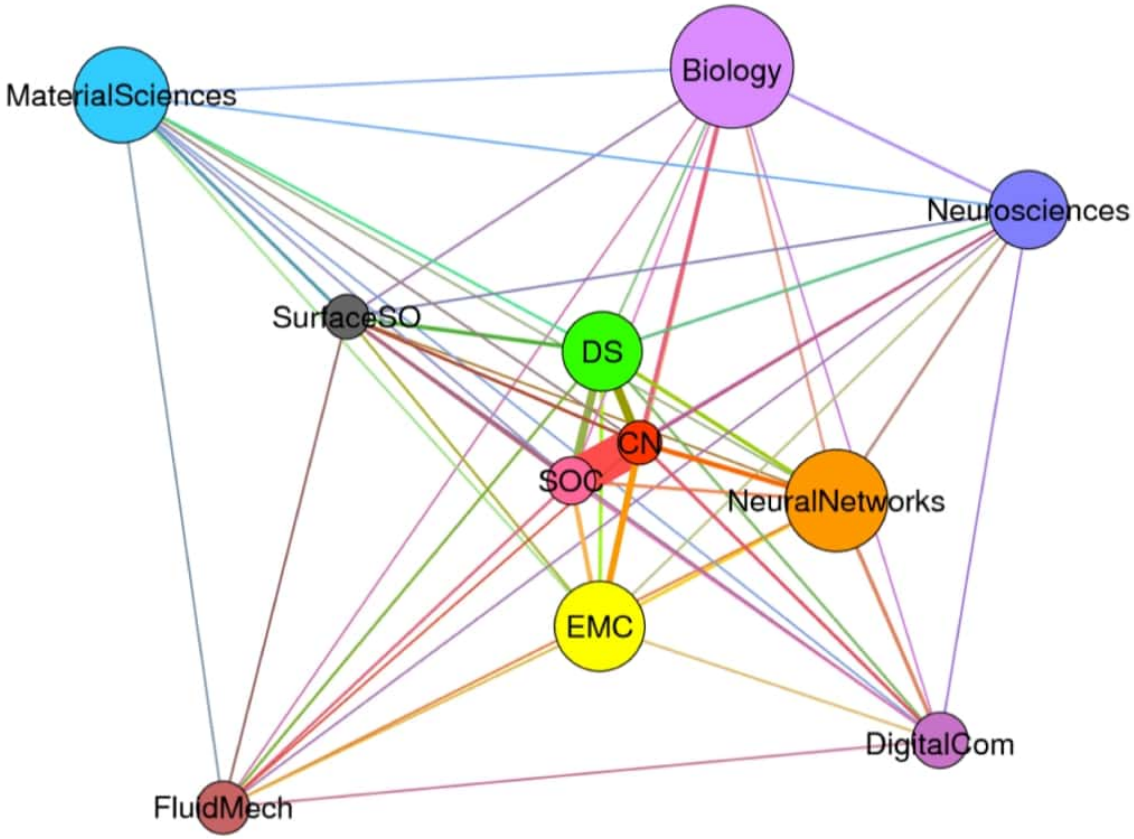
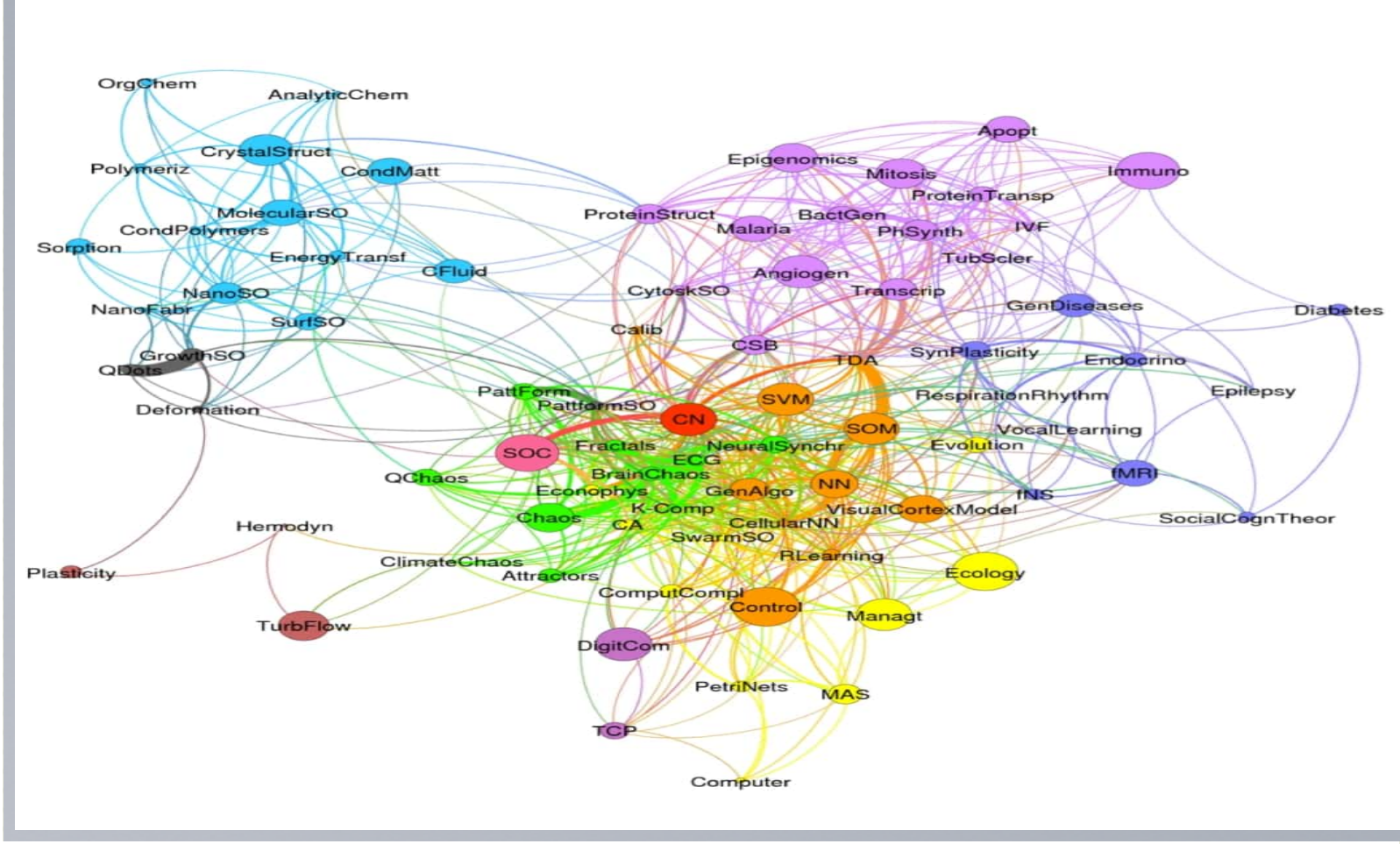
topic keywords	Results
self organ*	32484
complex network*	6953
dynamical system	8205
econophysics	633
strange attractor	769
synergetics	379
adaptive system*	1141
artificial intelligence	1812
attractor	1034
bifurcation	3164
chaos	5370
control	116017
criticality	980
ecology	5869
economics	2243
epistemology	345
far from equilibrium	253
feedback	12881
fractal	3867
ising	975
multi agent	2032
multiagent	665
multi scale	779
multifractal	390
multiscale	1439
neural network*	12747
(non linear* OR nonlinear*) NOT equation*	10240
non linear dynamic*	560
non linear system*	391
nonlinear dynamic*	2285
nonlinear system*	1826
phase transition	5503
plasticity	6667
random walk	758
robustness	6498
scaling	7008
social system*	586
spin glass*	643
stability AND (lyapunov OR non linear* OR nonlinear*)	1399
stochastic	9184
synchronization	4645
turbulence	4602
universality	861
cell* automat*	1659


Biology
MaterialSciences
Neurosciences
SurfaceSO
DS
CN
SOC
NeuralNetworks
EMC
DigitalCom
FluidMech

Reference	Times used	Journal (# distinct refs)	Times used
Bak P, 1987,PHYS REV LETT (59)	2131	NATURE (29166)	169309
Albert R, 2002, REV MOD PHYS (74)	2050	P NATL ACAD SCI USA (42504)	151140
Laemmli UK, 1970, NATURE (227)	1762	J BIOL CHEM (59436)	149042
Watts DJ, 1998, NATURE (393)	1732	SCIENCE (24880)	148002
Barabasi AL, 1999, SCIENCE (286)	1693	CELL (11044)	99168
Bak P, 1988, PHYS REV A (38)	1555	PHYS REV LETT (23269)	94861
Sambrook J, 1989, MOL CLONING LAB MANU	1439	J AM CHEM SOC (29807)	82569
Newman MEJ, 2003, SIAM REV (45)	1308	EMBO J (10926)	53049
Bradford MM, 1976, ANAL BIOCHEM (72)	1255	MOL CELL BIOL (12866)	52694
Lowry OH, 1951, J BIOL CHEM (193)	1106	J NEUROSCI (12313)	43152
Rumelhart DE, 1986, PARALLEL DISTRIBUTED (1)	947	J IMMUNOL (18891)	41496
Strogatz SH, 2001, NATURE (410)	907	PHYS REV B (19367)	41450
Kohonen T, 1982, BIOL CYBERN (43)	901	J CELL BIOL (10239)	40560
Chomczynski P, 1987, ANAL BIOCHEM (162)	849	J CHEM PHYS (17136)	40074
Goldberg DE, 1989, GENETIC ALGORITHMS S	822	GENE DEV (4879)	38903
Lorenz EN, 1963, J ATMOS SCI (20)	726	BIOCHEMISTRY-US (16035)	32061
Mandelbrot BB, 1982, FRACTAL GEOMETRY NAT	721	BRAIN RES (15364)	30517
Kohonen T, 1990, P IEEE (78)	715	ANGEW CHEM INT EDIT (7572)	27718
Dorogovtsev SN, 2002, ADV PHYS (51)	688	NUCLEIC ACIDS RES (9738)	27242
Albert R, 2000, NATURE (406)	678	J EXP MED (8100)	27220


OrgChem
AnalyticChem
CrystalStruct
Polymeriz
CondMatt
MolecularSO
CondPolymers
Sorption
EnergyTransf
CFluid
NanoSO
NanoFabr
SurfSO
GrowthSO
QDots
Deformation
Plasticity
Hemodyn
TurbFlow
ClimateChaos
Attractors
ComputCompl
Control
Managt
DigitCom
PetriNets
MAS
TCP
Computer
Ecology
RLearning
SwarmSO
CellularNN
VisualCortexModel
K-Comp
CA
Chaos
Econophys
GenAlgo
NN
QChaos
BrainChaos
ECG
Fractals
NeuralSynchr
SOC
CN
PattFormSO
PattForm
SVM
SOM
Evolution
VocalLearning
RespirationRhythm
Epilepsy
Endocrino
SynPlasticity
TDA
CSB
Calib
CytoskSO
Transcrip
Angiogen
TubScler
PhSynth
IVF
Malaria
BactGen
ProteinStruct
ProteinTransp
Mitosis
Epigenomics
Immuno
Apopt
GenDiseases
Diabetes
fMRI
fNS
SocialCognTheor

Reference	Topic	$\mathcal{N}(r)$ (%)
Press et al. (1992)*	Numerical recipes (book)	1.250
Shannon (1948)*	Information theory	0.607
Metropolis et al. (1953)	Monte Carlo integration	0.509
Nicolis et al. (1977)*	Self organization (book)	0.420
Kauffman (1993)*	Self organization (book)	0.309
Hebb (1949)	Neuropsychology and behavior (book)	0.297
Alberts et al. (1994)	Molecular and cellular biology (book)	0.288
Abramowitz et al. (1968)*	Handbook of mathematical functions	0.269
Feller (1958)*	Introduction to probability theory (book)	0.268
Watson & Crick (1953)	Structure of DNA	0.250
Lakowicz (1999)	Fluorescence spectroscopy	0.249
Turing (1952)	Morphogenesis	0.237
Witten et al. (1981)	Diffusion-limited aggregation	0.234
Cohen (1988)	Statistics and behavioral sciences (book)	0.223
Hopfield (1982)	Neural networks	0.217
Stanley (1971)	Phase transition (book)	0.202
Whitesides et al. (2002)	Self-assembly	0.188
Marquardt (1963)	Applied mathematics	0.174
Chomczynski (1987)	RNA isolation	0.167
Venter et al. (2001)	Human genome sequence	0.160

Thanks for paying attention