

PERSONAL INFORMATION

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ABILITAZIONI E IDONEITÀ

08/08/2018 - 08/08/2024

Idoneità Dirigente di Ricerca I livello

Area Strategica sistemi complessi, plasmici, materia soffice, biofisica
CNR, Bando 315.42 DR

08/08/2018 - 08/08/2024

Abilitazione Seconda Fascia 02/B2

Professore Associato, Fisica Teorica della Materia
MIUR, Bando 2016 (DD n. 1532/2016)

07/12/2018

Idoneità Primo Ricercatore CNR

Area Strategica Sistemi Complessi, Materia Soffice, Biofisica
CNR, Bando N. 367.194 PR

11/12/2013 - 11/12/2019

Abilitazione Seconda Fascia 02/B2

Professore Associato, Fisica Teorica della Materia
MIUR, Bando 2012 (DD n. 222/2012)

RESEARCH TOPICS

Models and Analysis of Online Social Media

Complex Networks for Big Data and Medical Science

Data Analysis and Decisional Processes

Complex Networks for Critical Infrastructures and Homeland Security

Smart Grids, Water Networks, Urban resilience

WORK EXPERIENCE

- 2020-today **Senior Research Scientist (Primo Ricercatore)**
Permanent Position at CNR "Institute for Complex Systems" (ISC)
- 2019-Today **President of the Big Data in Health Society**
BDHS is the scientific society for Big Data in the Health sector organizing yearly the international conference BDH (Big Data in Health)
- 2019-2024 **Associate Professor**
Gubkin Russian State University of Oil and Gas, Moscow
- Dec 2019 **Supervisor**
Engineering Design & Research, Italy
Theme: Supervisione e validazione attività di ricerca e supporto all'implementazione del sistema di supporto alle decisioni per la gestione della risorsa idrica e dell'energia convenzionale ENAS/RAS
- 2017-Today **Head of Lab**
Head and Founder of APPLICO Lab – the laboratory on Applied Complexity at CNR-ISC
- 2012-Today **Treasurer of NETONETS**
NETONETS is the nonprofit association on Networks of Networks organizing the homonymous international workshops
- 2010-2020 **Research Scientist (Ricercatore)**
Permanent Position at CNR "Institute for Complex Systems" (ISC)
- 2004 -2010 **Tenure Track Researcher**
INFM-CNR, Italy
Center for Statistical Mechanics and Complexity (SMC)
Theme: Complexity in Glassy Systems
- 2003 -2004 **Senior Researcher**
INFM, Italy
Center for Statistical Mechanics and Complexity (SMC)
Theme: Energy Landscape of Glassy Systems
- 2001 -2003 **Research Assistant**
Università degli studi "La Sapienza", Roma
Physics Dept.
Theme: Disordered Systems and Glass Transition
- July 2000 **Consultant**
Step srl (betting company), Italy
Theme: Analysis of relation among anomalous betting odds and malicious money losses
- 2000 - 2001 **Post Doc**
Università degli studi "La Sapienza", Roma

Physics Dept.

Theme: Vibrational dynamics and relaxation in disordered systems: liquids and amorphous solids

1996, 2nd semester **Visiting Scientist**

Center for Polymer Studies & Physics Dept., Boston University

Borsa di studio per l'attività di perfezionamento o specializzazione all'estero, III concorso, bandita dall'università degli studi di Napoli "Federico II", raggruppamento disciplinare 02 (Scienze Fisiche)

EDUCATION AND TRAINING

1997-2002 **PhD in Condensed Matter Physics**

Place: Boston University, Physics Dept.

Advisor: Prof. H.E. Stanley

Thesis: "Water-like anomalies in classical fluids"

1995 **VI National School on Material Science**

Place: Ostuni (IT) (winner of INFM grant)

1994 **V National School on Material Science**

Place: Ostuni (IT) (winner of INFM grant)

1992 **Statistical Physics of Complex Systems**

Level: intensive post-graduate level course

Place: Eotvos Lorand University, Budapest (HUN)

1987-1993 **Master in Physics and Computer Science**

Grade 110/110 "magna cum laude"

Place: Università degli studi di Napoli "Federico II"

Advisor: Prof. Antonio Coniglio

Thesis: "Percolative approach and fast dynamics for frustrated spin systems"

TEACHING

2017-2020 **Analisi delle informazioni - teoria e pratica dell'analisi dei dati. Big data, flussi, reti**

Modulo di 3h con cadenza bimestrale per il "Corso di qualificazione in tecniche investigative e tecnico-scientifiche" riservato ad operatori in servizio presso Squadre Mobili, Gabinetti di Polizia Scientifica, DIGOS, Squadre di P.G. dei Compartimenti della Polizia Stradale e Ferroviaria, Nettuno RM

24/10/2016 **Complex Networks and Energy Infrastructures (2h)**

PhD course "Modelling and management of environmental systems" by prof. Angelo Facchini, Università di Siena

28-30 Oct 2015 **Computational methods for complex networks: a minicourse (10h)**

IMT Alti Studi Lucca

13/02/2014 **Infrastructural Networks**

2h module, PhD course "Complex Networks" by prof. Guido Caldarelli, IMT Alti Studi Lucca

- 23/05/2013 **Technological Networks**
2h module, PhD course "Complex Networks" by prof. Guido Caldarelli, IMT AltI Studi Lucca
- 17/06/2013 **Infrastructural Networks**
2h module, PhD course "Complex Networks" by prof. Guido Caldarelli, IMT AltI Studi Lucca
- 2006-2011 **Many Body Simulations**
second half of the Master course "Computational Physics for Condensed Matter" (prof. Piero Tartaglia), dep. of Physics, Univ. of Roma "La Sapienza"
- 2003-2006 **Many Body Simulations**
second half of the post-bachelor course "Computational Physics 2" (prof. Piero Tartaglia), dep. of Physics, Univ. of Roma "La Sapienza"
- July 2003 **Computer Forensic and Social Engineering**
Corso Alta Formazione "SECURMAN", Universita' degli Studi di Catania, (5 days - 6 h/day)
- 2001 **Slow Dynamics and Effective Temperatures**
2h module, Phd course "Physics of Complex and Disordered Systems" (prof. Enzo Marinari), dep. of Physics, Univ. of Roma "La Sapienza"
- Fall Semester 1997 **Quantum Mechanics**
Teaching Fellow, Boston University
- Spring Semester 1997 **Physics Lab**
Teaching Fellow, Boston University
- Fall Semester 1996 **Physics Lab**
Teaching Fellow, Boston University
- Spring Semester 1996 **Introductory Physics**
Teaching Fellow, Boston University

TUTORING AND MENTORING

- 2019-Today **Ernestina Lamponi**
PhD Thesis in progress. Subjects: Promuovere partecipazione prosociale attraverso la comunicazione istituzionale in contesti online. Università Telematica Internazionale UNINETTUNO, Roma, Italy
- 2019-Today **Fatemeh Aghaei**
PhD Thesis in progress. Subjects: Traffic Models, Random Walk estimats of Power Flow consumptions. Department of Physics, University of Isfahan, Isfahan, Iran
- 2018-2019 **Matteo Nardone**
MS Thesis "Approccio Analitico ed Analisi Numerica allo studio di Reti Autoriparanti", dept. of Physics, Univ. of Roma "Tor Vergata"
- 2015-2016 **Niccolo' Vallarano**

MS Thesis "Maximum entropy methods for complex networks reconstruction from partial information", dept. of Mathematics, Univ. of Roma "La Sapienza"

2015-2016 **Stefano Sebastio**

Post-Doc for the EU CIPS project CI2C "Critical Infrastructures and Cloud Computing: understanding cross-sectorial criticalities and security practices" (currently Researcher in Computer Science: security, malware analysis – INRIA, Rennes, France)

2012-2013 **Sakshi Pahwa**

PhD Thesis "Dynamics on Complex Networks with Applications to Power Grids", dept. of Electrical Engineering, Kansas State University (currently at Tata Consultancy Services)

2010-2011 **Marco Pietrosanto**

Bachelor Thesis "Complex Network Analysis", dep. of Physics, Univ. of Roma "La Sapienza" (currently Lead Machine Learning Engineer presso Omninet)

2004-2005 **Dario Villamaina**

Bachelor Thesis "Non-equilibrium relaxation of simple systems", dept. of Physics, Univ. of Roma "La Sapienza" (currently Vice president presso Capital Fund Management (CFM), Paris Area, France)

2000-2001 **Chantal Valeriani**

Master Thesis "La relazione di Fluttuazione e Dissipazione in un modello di Silice fuori equilibrio", dept. of Physics, Univ. of Roma "La Sapienza" (Ramon y Cajal Assistant Professor at Universidad Complutense de Madrid)

AFFILIATIONS AND COMMITTEES

- 2021-Today Member of the Italian multidisciplinary research group for the objectives of the GHSA 2024 framework, Italian Ministry of Health
- 2021-Today Associate to the "Centro Ricerche Enrico Fermi" (CREF), Rome
- 2020-Today Member of the "Center of Data and Complexity for Society" at University "Sapienza", Rome
- 2019-Today Member of the "Collegio Dottorato in "Mente e Tecnologie nella Società Digitale" at University "UniNettuno", Rome
- 2019-Today Founder and Scientific Chief of the "International Laboratory on Complexity", Napoli, a joint initiative of AGCOM (Italian Antitrust Agency on Communication) and CNR (Italian National Research Council) with the support of Centro Studi Salvemini, Napoli
- 2019-2024 Associate/Affiliate to the Gubkin Russian State University of Oil and Gas (National Research University), Moscow
- 2017-Today Member of the Scientific Committee of "Bracciano Smart Lake"
- 2017-2020 Member of the "Data Science and Complexity" Lab of the University "Ca' Foscari", Venice
- 2012-Today Visiting Professor at the IMT Lucca Institute for Advanced Studies, Graduate School on Institutions, Markets and Technologies
Research Associate @ NETWORK(NATural netWORKs) Unit
theme: Complex Networks & Critical Infrastructures

- 2018-2021 Member of the Council of the Complex Systems Society
- 2012-2014 Member of OSN Osservatorio Sicurezza Nazionale (Observatory for the National Security)
CEMISS - Ministero della Difesa (Department of Defense)
theme: Homeland Security - Crisis Management
- 2011-Today Research Fellow @ LIMS London Institute for Mathematical Sciences
theme: Self-healing Networks, Cyber Cartography & Cyber Warfare

SOCIETIES

- 2015-today Member of ESRA – the European Safety and Reliability Association
- 2014-2017 Member of the Council of the CSS Complex Systems Society
- 2014-2017 Member of IEEE the Institute of Electrical and Electronics Engineers
- 2011-2017 Member of APS the American Physical Society
- 2010-today Member of the CSS Complex Systems Society
- 2010-2015 Member of AIIC the Italian Experts on Critical Infrastructures

PROJECTS

- Responsabile di attività** progetto di ricerca LIVING GRID (CTN02_00018_9856993) del programma PON Cluster Energia, con un budget di 1,0 Meu in tre anni. Responsabile dal 2 maggio 2019 per il nodo CNR-ISC relativamente alla modellazione di scenari per gli stress test e per l'analisi di resilienza di microgrid
- Project Leader** AMOFI (Analisi e MOdelli dei Flussi Informativi nelle Reti Sociali / Analysis and models of information fluxes in social networks), 24 months CNR projects started February 2018, budget 190000 eu
- Direttore di Ricerca** MIPIACE (Miglioramento dei Processi Industriali per la Sicurezza Alimentare e Conservabilità della Frutta Secca ed Essiccata), protocollo CDS000378, 10/6/2015-9/6/2019 presso V.BESANA SpA, budget per la ricerca 1.632.992 eu
- Principal Investigator and Chief Scientific Officer** EU CIPS project CI2C "Critical Infrastructures and Cloud Computing: understanding cross-sectorial criticalities and security practices", 21 month project starting September 2014, budget 490.000 eu (440.000 eu funded by EU). PI and Leader for the LIMS (London Institute for Mathematical Sciences) node. Responsible for the modeling and the quantification of cross-sectorial criticalities and for the dissemination activities. Leader of WP2 "Cross-sector criticalities analysis"
- Principal Investigator and Chief Scientific Officer** EU H2020 project DOLFINS "Distributed Global Financial Systems for Society". 3 year project starting September 2014, budget 4.250.000 eu (3.650.000 eu funded by EU). PI and Leader for the LIMS (London Institute for Mathematical Sciences) node
- Participation**
 - 2016-2018 Italy-Israel project NECST "NETwork aware Cyber SecuriTy" among CNR and Bar Ilan University
 - 2012-2017 EU IP project MULTIPLEX nr.317532 "Foundational Research on MULTIlevel comPLEX networks and systems "

- 2012-2018 CNR-PNR National Project "Crisis-Lab"
- 2012-2015 EU FET Open project PLEASED "PLants Employed As SEnsing Devices"
- 2010-2015 EU FET Open project FOC nr.255987 "Forecasting Financial Crisis"
- 2011-2013 ENEL consultant "Smart Grids and Distributed Generation"
- 2011-2014 US grant HDTRA1-11-1-0048 "Self-Healing Networks"

Referrals

- Sept 2016 ETH Zurich, 570.500 CHF project
- March 2016 Vienna Science and Technology Fund, project worth 1.599.000 EU
- March 2015 Israeli Science Foundation, project worth 1.085.760 NIS
- Dec 2013 National Science Center, Poland, project worth 2,108,627.00 PLN
- March 2011 MIUR, Firb "Futuro in Ricerca 2010", project worth 1.157.563 EU
- Dec 2010 Swiss National Center Foundation, project worth 117.820 CHF

ACADEMICS

- 14 may 2019
- 1 book, 2 editorship, 4 chapters in book, 116 papers, 2 software packages
 - 8380 citations, 46 h-index, 85 i10-index (Google Scholar, 4 May 2021)
 - High impact papers: 1 Nature, 2 Proceedings of the National Academy of Science, 1 Science Advances, 6 Physical Review Letters, 6 Nature Scientific Reports, 1 New Journal of Physics, 9 Plos One
 - 21 workshop/conference organizer, 32 committee/chair in international workshops/conferences
 - Talks: 5 keynote, 1 panel expert, 5 invited lectures, 5 invited seminars, 19 invited, 33 contributed, 3 roundtables
 - Lectures: 2 public, 14 invited
 - Referee for PNAS, Nature, Plos ONE, New Journal of Physics, APS and EPS journals, IEEE journals and others
 - (2021-today) Academic Editor for PLOS Water
 - (2021-today) Academic Editor for Frontiers in Network Physiology
 - (2020-today) Academic Editor for Complexity (Wiley-Hindawi), ISSN: 1076-2787 (Print), 1099-0526 (Online), DOI: 10.1155/8503
 - (2019-today) Complexity Editorial Board for ENTROPY (Wiley-Hindawi), ISSN 1099-4300, DOI: 10.3390/entropy
 - (2018-today) Academic Editor for PLOS One, ISSN: 1932-6203
 - (2014-2017) Academic Editor for Advances in Networks (Science Publishing Group) ISSN: 2326-9766 (Print), 2326-9782 (Online)

SKILLS

- Programming:** C++, C, Octave/MatLab, Gnu Scientific Libraries, Fortran, Bash, Java
- Algorithmics:** Numerical methods, Optimization, Graphs & Networks, Search and Sorting, Game euristics
- Simulations:** Monte Carlo, Molecular Dynamics, Stochastic Dynamics, Differential Equations
- Teaching:** Statistical Physics, Computational Physics, Complex Networks

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](http://www.cerl.eu)

PUBLICATIONS

Preprint

1. Emanuele Brugnoli, Matteo Cinelli, Fabiana Zollo, Walter Quattrociocchi, and Antonio Scala. Lexical convergence inside and across echo chambers. *arXiv e-prints*, page arXiv:1903.11452, Mar 2019

Books and Editorships

1. Gregorio D'Agostino and Antonio Scala, editors. *Networks of Networks: The Last Frontier of Complexity*. Understanding Complex Systems. Springer International Publishing, 2014
2. Tomaso Aste, Luciano Pietronero, Antonio M. Scarfone, and Antonio Scala, editors. *Complex, inter-networked economic and social systems*, volume 225, 2016
3. Gregorio D'Agostino and Antonio Scala, editors. *Critical Information Infrastructures Security: 12th International Conference, CRITIS 2017, Lucca, Italy, October 8-13, 2017, Revised Selected Papers*, LNCS, Security and Cryptology. Springer International Publishing, 2018. 12th International Conference, CRITIS 2017, Lucca, Italy, October 8-13, 2017, Revised Selected Papers

Chapters in Books

1. Angelo Facchini and Antonio Scala. *Complex systems applications to electric mobility and regional intermittent source planning*, pages 641–664. Academic Press (Elsevier, LONDON - GBR, 2021
2. Antonio Scala. *Complex Networks and Infrastructural Grids*, volume 5 of *Order, Disorder and Criticality Advanced Problems of Phase Transition Theory*, chapter Chapter 7, pages 341–396. WORLD SCIENTIFIC, 2017
3. Gregorio D'Agostino and Antonio Scala. Systemic interdependences. In William Sims Bainbridge and Mihail C. Roco, editors, *Handbook of Science and Technology Convergence*, pages 1–11. Springer International Publishing, 2015
4. Power grids, smart grids and complex networks. In *Nonlinear Phenomena in Complex Systems: From Nano to Macro Scale*, NATO Science for Peace and Security Series C: Environmental Security, pages 97–110. Springer Netherlands, 2014
5. Vincenzo Fioriti, Gregorio D'Agostino, and Antonio Scala. The complexity science approach vs. the simulative approach. In Sandro Bologna Paul Théron, editor, *Critical Information Infrastructure Protection and Resilience in the ICT Sector*, chapter 7, pages 139–152. IGI Global, 2013

2021

1. The mathematics of multiple lockdowns. *Scientific Reports*, 11(1):8078, April 2021
2. Francesco Surmonte, Umberto Perna, Antonio Scala, Alessandro Rubino, and Angelo Facchini. A data-driven approach to renewable energy source planning at regional level. *Energy Sources, Part B: Economics, Planning, and Policy*, 0(0):1–12, 2021
3. Giovanni Bonaccorsi Francesco Pierri Ana Lucia Schmidt SCALA A Fabio Pammolli Walter Quattrociocchi Alessandro Galeazzi, Matteo Cinelli. Human mobility in response to covid-19 in france, italy and uk. *Scientific reports (Nature Publishing Group)*, 2021
4. A community-structure-based method for estimating the fractal dimension, and its application to water networks for the assessment of vulnerability to disasters. *Water Resources Management*, March 2021
5. Giudicianni C.; Herrera M.; Di Nardo A.; Oliva G.; Scala A. The faster the better: On the shortest paths role for near real-time decision making of water utilities. *Reliability engineering & systems safety*, 212, 2021

2020

6. Time, space and social interactions: exit mechanisms for the covid-19 epidemics. *Scientific Reports*, 10(1):13764, August 2020
7. The covid-19 social media infodemic. *Scientific Reports*, 10(1):16598, October 2020
8. Economic and social consequences of human mobility restrictions under covid-19. *Proceedings of the National Academy of Sciences*, 2020
9. Topological placement of quality sensors in water-distribution networks without the recourse to hydraulic modeling. *Journal of Water Resources Planning and Management*, 146(6):04020030, 2020
10. Selective exposure shapes the facebook news diet. *PLOS ONE*, 15(3):1–17, 03 2020

11. Measuring social response to different journalistic techniques on facebook. *Humanities and Social Sciences Communications*, 7(1):17, July 2020
12. *Big Data e Social Media: polarizzazione e camere dell'eco su Facebook e Twitter*, volume 22, pages 27–37. 2020

2019

13. Recursive patterns in online echo chambers. *Scientific Reports*, 9(1):20118, December 2019
14. Health-care inequalities in italy: challenges for the government. *2019*, 4(12), December Lancet Public Health
15. Toward green energy: complex networks and infrastructural challenges. In *The Electric Cities and the Energy Transition*, volume 2/2019 of *SPE - SOCIETY OF PETROLEUM ENGINEERS - ITALIAN SECTION - TECHNICAL BULLETIN*. SPE - SOCIETY OF PETROLEUM ENGINEERS - ITALIAN SECTION, 2019
16. Poprank: Ranking pages' impact and users' engagement on facebook. *PLOS ONE*, 14(1):1–14, 01 2019
17. Portfolio analysis and geographical allocation of renewable sources: A stochastic approach. *Energy Policy*, 125:154 – 159, 2019
18. The present state of lake bracciano: hope and despair. *Rendiconti Lincei. Scienze Fisiche e Naturali*, 30(1):83–91, Mar 2019
19. Polarization and fake news: Early warning of potential misinformation targets. *ACM Trans. Web*, 13(2):10:1–10:22, March 2019

2018

20. A holistic approach for collaborative workload execution in volunteer clouds. *ACM Trans. Model. Comput. Simul.*, 28(2):14:1–14:27, March 2018
21. Polarization of the vaccination debate on facebook. *Vaccine*, 36(25):3606 – 3612, 2018
22. Della natura non-euclidea dei big data su internet e sulle sue conseguenze / about the non euclidean nature of internet's big data and its consequences. *S&F scienzae filosofia.it*, 201:169–178, 2018. ISSN: 2036-2927
23. Equal load-sharing models of cascades in interdependent network infrastructures. In *Safety and Reliability–Safe Societies in a Changing World: Proceedings of ESREL 2018, June 17-21, 2018, Trondheim, Norway*, pages 1995–2000. CRC Press, 2018
24. Ripensare i fondamenti della liberal-democrazia nell'era di internet. *Micromega*, 7/2018:124–136, 2018
25. How news may affect markets' complex structure: The case of cambridge analytica. *Entropy*, 20(10), 2018
26. Sparse analytic hierarchy process: an experimental analysis. *Soft Computing*, 2018
27. Opinion-based optimal group formation. *Omega*, 2018
28. A complex network approach for the estimation of the energy demand of electric mobility. *Scientific Reports*, 8(1):268–, 2018
29. A suite of distributed methodologies to solve the sparse analytic hierarchy process problem. In *2018 European Control Conference (ECC)*. IEEE, jun 2018
30. Topological taxonomy of water distribution networks. *Water*, 10(4):444, 2018
31. Sensor placement in water distribution networks based on spectral algorithms. In *HIC 2018. 13th International Conference on Hydroinformatics*, volume 3 of *EPiC Series in Engineering*, pages 593–600. EasyChair, 2018

2017

32. Debunking in a world of tribes. *Plos One*, 12(7):e0181821, 2017
33. Availability study of the italian electricity scada system in the cloud. In *Critical Information Infrastructures Security. CRITIS 2016*, volume 10242 of *Lecture Notes in Computer Science*, pages 201–212. Springer, Cham, 2017
34. Anatomy of news consumption on facebook. *Proceedings of the National Academy of Sciences*, 114(12):3035–3039, 2017
35. *Access Time Eccentricity and Diameter*, volume 471 of *Lecture Notes in Control and Information Sciences*, chapter Positive Systems, pages 215–226. Springer International Publishing, Cham, 2017
36. Sparse and distributed analytic hierarchy process. *Automatica*, 85(Supplement C):211 – 220, 2017
37. Complexity science for sustainable smart water grids. In *Advances in Artificial Life, Evolutionary Computation, and Systems Chemistry. WIVACE 2016. Communications in Computer and Information Science*, volume 708 of *Communications in Computer and Information Science book series (CCIS, volume 708)*. Springer, Cham, 2017
38. Modeling confirmation bias and polarization. *Scientific Reports*, 7:40391–, January 2017
39. Mapping social dynamics on facebook: The brexit debate. *Social Networks*, 50:6 – 16, 2017
40. *Everyday the Same Picture: Popularity and Content Diversity*, pages 225–236. Springer International Publishing, Cham, 2017

2016

41. Adopting the cloud to manage the electricity grid. In *2016 IEEE International Energy Conference (ENERGYCON)*, pages 1–6, April 2016
42. Cascades in interdependent flow networks. *Physica D: Nonlinear Phenomena*, 323–324:35 – 39, 2016. Nonlinear Dynamics on Interconnected Networks
43. The equal load-sharing model of cascade failures in power grids. *Physica A: Statistical Mechanics and its Applications*, 462:737 – 742, 2016
44. *A Mean Field Model of Coupled Cascades in Flow Networks*, pages 259–263. Springer International Publishing, Cham, 2016
45. Self-healing protocols for infrastructural networks. In *Critical Information Infrastructures Security: 9th International Conference, CRITIS 2014, Limassol, Cyprus, October 13-15, 2014, Revised Selected Papers*, pages 308–313, Cham, 2016. Springer International Publishing
46. Mitigating cascades in sandpile models: an immunization strategy for systemic risk? *The European Physical Journal Special Topics*, 225(10):2017–2023, 2016
47. Islanding the power grid on the transmission level: less connections for more security. *Scientific Reports*, 6:34797–, October 2016
48. Enhancing network resilience via self-healing. In *2016 IEEE Workshop on Environmental, Energy, and Structural Monitoring Systems (EESMS)*, pages 1–5, June 2016
49. Data-driven modeling of solar-powered urban microgrids. *Science Advances*, 2(1), 2016
50. Echo chambers: Emotional contagion and group polarization on facebook. *Scientific Reports*, 6:37825–, December 2016
51. The spreading of misinformation online. *Proceedings of the National Academy of Sciences*, 2016
52. Users polarization on facebook and youtube. *Plos One*, 11(8):e0159641, 2016
53. Homophily and polarization in the age of misinformation. *The European Physical Journal Special Topics*, 225(10):2047–2059, 2016
54. Complex, inter-networked economic and social systems. *The European Physical Journal Special Topics*, 225(10):1875–1877, 2016

2015

55. Emotional dynamics in the age of misinformation. *PLOS ONE*, 10(9):1–22, 09 2015
56. A workload-based approach to partition the volunteer cloud. In *2015 IEEE Conference on Collaboration and Internet Computing (CIC)*, pages 210–218, Oct 2015
57. Equal load-sharing models of cascades in network infrastructures. In *Safety and Reliability of Complex Engineered Systems: ESREL 2015*, pages 4493–4498, 2015. Papers presented at ESREL 2015 can be found in the conference proceedings published by CRC Press: Safety and Reliability of Complex Engineered Systems: ESREL 2015
58. Cascade failures and distributed generation in power grids. *Int. J. Critical Infrastructures*, 11(1):27–35, 2015
59. Size fluctuation in energy demand for the electric market: the effect of renewable sources. In *Safety and Reliability of Complex Engineered Systems: ESREL 2015*, pages 4385–4388, 2015. Papers presented at ESREL 2015 can be found in the conference proceedings published by CRC Press: Safety and Reliability of Complex Engineered Systems: ESREL 2015
60. Knowing power grids and understanding complexity science. *Int. J. Critical Infrastructures*, 11(1):4–14, 2015
61. Green power grids: How energy from renewable sources affects networks and markets. *PLoS ONE*, 10(9):e0135312, 09 2015
62. Viral misinformation: The role of homophily and polarization. In *Proceedings of the 24th International Conference on World Wide Web - Companion*, 2015
63. Trend of narratives in the age of misinformation. *PLoS ONE*, 10(8):e0134641, 08 2015
64. Science vs conspiracy: Collective narratives in the age of misinformation. *PLoS ONE*, 10(2):e0118093, 2015

2014

65. Complex networks for data-driven medicine: the case of class iii dentoskeletal disharmony. *New Journal of Physics*, 16(11):115017, 2014
66. Directional depletion interactions in shaped particles. *Condensed Matter Physics*, 17(3):33007:1–6, 2014
67. Opinion dynamics on interacting networks: media competition and social influence. *Sci. Rep.*, 4:4938:1–7, May 2014
68. Self-healing networks: Redundancy and structure. *PLoS ONE*, 9(2):e87986, 02 2014
69. Abruptness of cascade failures in power grids. *Sci. Rep.*, 4:–, January 2014
70. An agent based approach for the development of ev fleet charging strategies in smart cities. In *Electric Vehicle Conference (IEVC), 2014 IEEE International*, pages 1–8, Dec 2014
71. Integrating the electric grid and the commuter network through a "vehicle to grid" concept: a complex networks theory approach. In *Electric Vehicle Conference (IEVC), 2014 IEEE International*, pages 1–5, Dec 2014
72. Social determinants of content selection in the age of (mis)information. In *Social Informatics*, volume 8851 of *Lecture Notes in Computer Science*, pages 259–268. Springer International Publishing, 2014
73. The economy of attention in the age of (mis)information. *Journal of Trust Management*, 1:12, 2014
74. Misinformation in the loop: the emergence of narratives in online social networks. In *ITAIS 2014 XI Conference of the Italian Chapter of AIS*, 2014

2013

75. Distributed generation and resilience in power grids. In *Critical Information Infrastructures Security*, volume 7722 of *Lecture Notes in Computer Science*, pages 71–79. Springer Berlin Heidelberg, 2013
76. Brownian dynamics simulation of polydisperse hard spheres. *The European Physical Journal Special Topics*, 216(1):21–29, 2013
77. The robustness of assortativity. In *Critical Information Infrastructure Security*, volume 6983 of *Lecture Notes in Computer Science*, pages 223–226. Springer Berlin Heidelberg, 2013

2012

78. Assortativity decreases the robustness of interdependent networks. *Phys. Rev. E*, 86:066103, Dec 2012
79. Event-driven langevin simulations of hard spheres. *Phys. Rev. E*, 86:026709, Aug 2012
80. Using networks to understand medical data: The case of class iii malocclusions. *PLoS ONE*, 7(9):e44521, 09 2012
81. Robustness and assortativity for diffusion-like processes in scale-free networks. *EPL (Europhysics Letters)*, 97(6):68006, 2012
82. Competitors communities and taxonomy of products according to export fluxes. *The European Physical Journal Special Topics*, 212(1):115–120, 2012
83. A network analysis of countries export flows: Firm grounds for the building blocks of the economy. *PLoS ONE*, 7(10):e47278, 10 2012

2011

84. Population dynamics on complex food webs. *Advances in Complex Systems*, 14(04):635–647, 2011
85. A network approach to orthodontic diagnosis. *Orthodontics & Craniofacial Research*, 14(4):189–197, 2011

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86. Event-driven brownian dynamics for hard spheres. *The Journal of Chemical Physics*, 126(13):–, 2007
87. Molecular correlation functions for uniaxial ellipsoids in the isotropic state. *The Journal of Chemical Physics*, 124(10):104509, 2006
88. Saddle index properties, singular topology, and its relation to thermodynamic singularities for a ϕ^4 mean-field model. *Phys. Rev. E*, 70:036125, Sep 2004
89. Recent results on the connection between thermodynamics and dynamics in supercooled water. *Biophysical Chemistry*, 105:573 – 583, 2003

90. Application of statistical physics to understand static and dynamic anomalies in liquid water. *Journal of Statistical Physics*, 110(3-6):1039–1054, 2003
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92. Reply to comment on quasisaddles as relevant points of the potential energy surface in the dynamics of supercooled liquids [j. chem. phys. 118, 5263 (2002)]. *The Journal of Chemical Physics*, 118(11):5265–5266, 2003
93. Statistical physics and liquid water: What matters. *Physica A: Statistical Mechanics and its Applications*, 306(0):230–242, April 2002
94. Water and its energy landscape. *The European Physical Journal E*, 9(3):233–237, 2002
95. A stroll in the energy landscape. *Philosophical Magazine Part B*, 82(2):151–161, 2002
96. Off-equilibrium dynamics in the energy landscape of a simple model glass. *Philosophical Magazine Part B*, 82(2):163–169, 2002
97. Models for a liquid-liquid phase transition. *Physica A: Statistical Mechanics and its Applications*, 304:23–42, February 2002
98. Quasisaddles as relevant points of the potential energy surface in the dynamics of supercooled liquids. *The Journal of Chemical Physics*, 116(23):10297–10306, 2002
99. Thermodynamic and structural aspects of the potential energy surface of simulated water. *Phys. Rev. E*, 63:041201, Mar 2001
100. Waterlike anomalies for core-softened models of fluids: Two-dimensional systems. *Phys. Rev. E*, 63:041202, Mar 2001
101. Thermodynamically important contacts in folding of model proteins. *Phys. Rev. E*, 63:032901, Feb 2001
102. Small-world networks and the conformation space of a short lattice polymer chain. *EPL (Europhysics Letters)*, 55(4):594, 2001
103. Dynamics of supercooled water in configuration space. *Phys. Rev. E*, 64:036102, Aug 2001

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104. The puzzling behavior of water at very low temperature. invited lecture. *Phys. Chem. Chem. Phys.*, 2:1551–1558, 2000
105. Unsolved mysteries of water in its liquid and glassy phases. *Journal of Physics: Condensed Matter*, 12(8A):A403, 2000
106. Free energy surface of supercooled water. *Phys. Rev. E*, 62:8016–8020, Dec 2000
107. Configurational entropy and diffusivity of supercooled water. *Nature*, 406(6792):166–169, July 2000
108. Applications of the stell-hemmer potential to understanding second critical points in real systems. *Journal of Statistical Physics*, 100(1-2):97–106, 2000
109. Instantaneous normal mode analysis of supercooled water. *Phys. Rev. Lett.*, 84:4605–4608, May 2000
110. Saddles in the energy landscape probed by supercooled liquids. *Phys. Rev. Lett.*, 85:5356–5359, Dec 2000
111. Classes of small-world networks. *Proceedings of the National Academy of Sciences*, 97(21):11149–11152, 2000
112. The puzzle of liquid water: a very complex fluid. *Physica D Nonlinear Phenomena*, 133:453–462, 1999
113. Quasicrystals in a monodisperse system. *Phys. Rev. E*, 60:2664–2669, Sep 1999
114. Waterlike anomalies for core-softened models of fluids: One dimension. *Phys. Rev. E*, 60:6714–6721, Dec 1999
115. The puzzling statistical physics of liquid water. *Physica A: Statistical Mechanics and its Applications*, 257:213–232, August 1998
116. Liquid-state anomalies and the stell-hemmer core-softened potential. *Phys. Rev. Lett.*, 81:4895–4898, Nov 1998
117. Kinetics of spatially confined precipitation and periodic pattern formation. *Physica A: Statistical Mechanics and its Applications*, 239(1):390 – 403, 1997
118. Percolation and cluster monte carlo dynamics for spin models. *Phys. Rev. E*, 54:175–189, Jul 1996
119. Crossover between spatially confined precipitation and periodic pattern formation in reaction diffusion systems. *Phys. Rev. Lett.*, 77:2834–2837, Sep 1996
120. Critical clusters and efficient dynamics for frustrated spin models. *Phys. Rev. Lett.*, 72:1541–1544, Mar 1994
121. Generalized percolation models for frustrated spin systems. *Il Nuovo Cimento D*, 16(8):1259–1264, 1994

TALKS

Keynote

1. Le camere dell'eco. In *"Fake news, polarizzazione e shit storm: la democrazia e la pluralità al tempo di internet"*, Istituto Studi Filosofici, Napoli, 30 Nov 2018
2. Come la babele di internet può influenzare le istituzioni. In *CYBER - Il Quinto Dominio - Esperimenti Nazionali e Strategie Internazionali*, Mercoledì 12 Dicembre presso il Centro Studi Americani, Via Michelangelo Caetani 32 Roma, con il patrocinio della Farnesina e del Ministero della Difesa e la partecipazione del Ministro Trenta, del Prefetto Vulpiani e degli ambasciatori Giuseppe Taló e Giulio Terzi di Sant'Agata, 2018
3. Information and news consumption on the web. In *ASSET (Action plan on Science in Society related issues in Epidemics and Total pandemics) final conference, October 30-31, Roma, 2017*
4. The equal load-sharing model of cascade failures in power grids. In *CompEng '14 (Complexity in Engineering)*, June 16-17, Barcelona, 2014
5. Power grids, smart grids and complex networks. In *New Challenges in Complex System Physics: Disaster forecasting, crisis modeling and sustainable development - NATO Advanced Research Workshop, May 20 - 24, Samarkand, Uzbekistan, 2013*

Invited

1. I fondamenti della democrazia liberale nell'era di internet. In *Colloquium Philosophy & Global Affairs*, 23 Marzo 2021, Catania, 2021
2. La tribalizzazione dei social media. In *Festival della scienza all'Esquilino "Scienza Pop"*, 12-15 Jun, Roma, 2019
3. Infrastructural challenges of the green energy transitions. In *"The Electric Cities and the Energy Transition: challenges and opportunities"*, 11 Apr, Fondazione Eni Enrico Mattei, Milano, 2019
4. Dati e intelligenza artificiale: come trasformare un'indagine di mercato in mappe di opportunità. In *"PolieCo, Forum Internazionale sull'Economia dei Rifiuti, XI Edizione"*, 20-21 Sept, Ischia (NA), 2019
5. Social media intelligence. In *Diplomacy - Festival della Diplomazia 2019, evento "Spies, Lies and Algorithms"*, 24 Oct, Ambasciata di Lituania, Roma, 2019
6. Cybersecurity: historical panorama between risks and new challenges. In *"Digital transformation: engaging in co-creation to prepare for future security threats: The European-Singaporean relationship"*, I-Com, Istituto per la Competitività, 2 April, Roma, 2019
7. Beyond cybersecurity: Social media hacking. In *"SECURITY BY DESIGN: Il mercato unico digitale dalla Direttiva Europea NIS al Cybersecurity Act"*, 28 Oct, Spazio Europa, Roma, 2019
8. Dati, reti complesse e bias cognitivi: guida alla sopravvivenza nel cyberspazio. In *Generdata: Reti e Dati del Futuro*, 10 Giugno, Giulianova (TE), 2019
9. I big data in medicina: come utilizzarli per una corretta informazione del paziente. In *Premio "Le Eccellenze dell'Informazione Scientifica e la Centralità del Paziente - Terza Edizione"*, 20 giugno, ore 9:00 -13:30, Palazzo Santa Chiara - Roma., 2019
10. Applying complexity: from critical infrastructures to health systems. In *"Data and Complexity Day"*, 12 Novembre, Aula Berengo, Ca' Foscari, Venezia, 2018
11. Using networks to understand medical data. In *"Big Data in Health 2018"*, Baronissi Campus, Università di Salerno, June 6-7-8, 2018
12. Social media e vulnerabilità cognitive : le nuove tecniche di information warfare. In *"Disinformazione, Influenza e Controinformazione nell'era digitale: nuove sfide per l'Intelligence"*, 13 novembre, convegno promosso dall'Istituto Gino Germani e dalla Società Geografica Italia, 2017
13. Come vaccinarsi contro le fake news in medicina? In *evento su invito riservato nell'ambito del Festival della Diplomazia*, 23 Ott, Ambasciata di Svizzera in Roma, 2017
14. Statistical physics for power grids. In *symposium on "Structure and Dynamics of Future Energy Systems"*, Dynamic Days 2016 conference, 7 June, Korfu GR, 2016
15. A practical use case: Adopting the cloud to manage the electricity grid. In *CI2C (Cloud Computing and Critical Information Infrastructures) Final Workshop, Monday, 23 May, Rome, 2016*
16. Comunità online, credulità collettiva ed amplificazione della disinformazione. In *Manipolazione del limes e resilienza della memoria, Roma Arché 2015, 23 May, Roma, 2015*
17. Power grids, renewable sources and electric markets. In *NetONets 2015*, June 2, Saragoza, 2015

18. Self-healing percolation. In *Invited session "Statistical physics of Electric Grids"*, APS (American Physics Society) March Meeting 2015, San Antonio TX, 2015
19. Self-healing percolation. In *Complex Networks 2014*, Nov 23-27, Marrakech, 2014
20. Self healing networks. In *Physics of multilayered interconnected networks (NetSci 2014 workshop)*, Berkeley, June 2, 2014
21. Distributed generation and resilience in power grids. In *New Interdisciplinary Perspectives: Measures and Models of Resilience workshop*, 1-2 Nov, Rockefeller Foundation & Oxford Martin School, Oxford, 2012
22. On the necessity of maps for cyberspace: the importance of complex networks. In *USAFOSR Cybersecurity conference @ LIMS the London Institute for Mathematical Sciences*, 10-11 April, London, 2012
23. Mitigating financial cascades. In *special session for the press, APS March Meeting, February 27–March 2, Boston*, 2012
24. Mitigating financial cascades. In *FOC meeting @ the European Central Bank, 22-23 Feb, Frankfurt am Main*, 2012
25. Spectra and dynamics for assortative and disassortative networks. In *ECT Workshop "Spectral Properties of Complex Networks"*, 23-27 July, Trento, 2012
26. Sulla necessità delle mappe nel cyberspazio. In *Internet Governance Forum Italia 2010, Tavola Rotonda: "Cyber Security: la sicurezza come strumento di sviluppo della società moderna"*, Ministero dello Sviluppo Economico, Roma 30 Nov, 2010
27. Granular and colloids. In *Fisica teorica e struttura della materia, XXIV Convegno, Levico Terme*, 17-20 Sept, 2006
28. Behavior of liquids in deeply undercooled states. In *NATO ADVANCED RESEARCH WORKSHOP: "New kinds of phase transitions: Transformations in disordered substances"*, Volga river, Russia, 24-28 May, 2001

Contributed

1. Decision making based on sparse information. In *Italian Regional Conference on Complex Systems*, July 1-3 Trento, Italy, 2019
2. Self-healing networks : a theoretical approach to smart grids' resilience. In *ESREL 2018, Thronheim, Norway*, 17-21 June, 2018
3. Allocation of renewable generation from an energy portfolio. In *1st AIEE simposium: Current and Future Challenges to Energy Security*, Milan, Nov 30 - Dec 2, 2016
4. Complex networks for data-driven medicine. In *Data Analytics in Healthcare*, 2-5 May, Athens, Greece, 2016
5. A mean field model of coupled cascade in flow networks. In *Critis 2015, Berlin*, Oct 5-7, 2015
6. Self-healing percolation. In *FisMat2015, Palermo*, Sept 28 - Oct 2, 2015
7. Self-healing percolation. In *101st Congresso Nazionale della Società Italiana di Fisica*, Roma, 21-25 Settembre, 2015
8. Size fluctuation in energy demand for the electric market: the effect of renewable sources. In *ESREL 2015 - 25th European Safety and Reliability Conference*, 7-10 sept, ETH Zurich, 2015
9. Equal load-sharing models of cascades in network infrastructures. In *ESREL 2015 - 25th European Safety and Reliability Conference*, 7-10 sept 2015, ETH Zurich, 2015
10. Self-healing percolation. In *XX Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi*, 29 giugno - 1 luglio, Università degli Studi di Parma, 2015
11. Self-healing protocols for infrastructural networks. In *CRITIS 2014 – 9th international conference on CRITICAL Information Infrastructures Security*, October 13-15 Limassol, Cyprus, 2014
12. Opinion dynamics on interacting networks: media competition and social influence. In *COMPUTATIONAL SOCIAL SCIENCE: from Social Contagion to Collective Behaviour* 19 Sept 2013, Barcelona, 2013
13. Cascade failures in power grids with distributed generation. In *APS March Meeting*, 18-22 March, Baltimore, 2013
14. Cascade failures from distributed generation in power grids. In *SESAME workshop on the Topological Approach to the Vulnerability Assessment and Cascading Failure Analysis of Electricity Networks*, 17 Nov, Lillehammer, 2012
15. Distributed generation and resilience in power grids. In *CRITIS12 Conference on Critical Information Infrastructures Security*, 17-18 Sept, Lillehammer Norway, 2012
16. Mitigating financial cascades in scale-free networks. In *Latsis Symposium*, 13-15 Sept, ETH Zurich, 2012
17. Full brownian dynamics simulation techniques for hard spheres. In *4-th Conference on Statistical Physics: Modern Trends and Applications*, July 3-6, Lviv, 2012
18. Mitigating financial cascades in scale-free networks. In *NetSci2012 The International School and Conference on Network Science*, 20-23 Jun, Chicago, 2012

19. Robustness and assortativity for diffusion-like processes in scale-free networks. In *APS March Meeting, Feb 27 - Mar 2, Boston, 2012*
20. Assortativity effects on diffusion-like processes in scale-free networks. In *ECCS'11 European Conference on Complex Systems, Wien, 12-16 Sept, 2011*
21. Patchy depletion interactions. In *MECO36 36th Conference of the Middle European Cooperation in Statistical Physics 5-7 April, Lviv, 2011*
22. Case-feature analysis: bipartite networks for data-driven medicine. In *ECCS'10 European Conference on Complex Systems, 13-17 Sept, 2010*
23. Engineering depletion interactions via nano-particle's shape. In *Nanosmat-5, 5th International Conference on Surfaces, Coatings and Nanostructured Materials, Reims 19-21 Oct, 2010*
24. Case-feature analysis: how to apply complex networks to childhood orthodontics. In *Società Italiana di Fisica, XCVI Congresso Nazionale, Bologna 20-24 Settembre, 2010*
25. Simulating the full langevin dynamics of hard spheres. In *DSFD 2010, 19th Discrete Simulation of Fluid Dynamics, Roma 5-9 July, 2010*
26. Assembly via shape-enhanced depletion interactions. In *STATPHYS 23, Genova, Italy, July 9-13, 2007*
27. Event driven brownian simulation of hard spheres. In *"Statics and dynamics of granular media and colloidal suspensions", July 4-6, Napoli, Italy, 2007*
28. Fluctuation-dissipation theorem in silica. In *"Relaxation in complex systems", Anacapri, Italy, 23-24 May, 2002*
29. Energy landscape and fluctuation-dissipation experiments for out-of-equilibrium bks silica. In *"Unifying Concepts in Glass Physics", Roma, Italy, 27 February - 2 March, 2002*
30. Small-world networks: the structure of inter-relations. In *New Economic Windows: New Paradigms for the New Millennium, Salerno, Italy, 13-15 September, 2001*
31. Diffusive directions and configurational entropy in supercooled water. In *IV International Discussion Meeting on Relaxations in Complex Systems, Crete, Greece, 18-26 June, 2001*
32. Saddles in the energy landscape of supercooled liquids. In *"Relaxation in complex systems", Anacapri, Italy, 7-8 June, 2001*
33. Dynamics of supercooled liquids: probing saddles in the energy landscape. In *8th International Workshop on Disordered Systems, Andalo (Trento), Italy, 12-15 March, 2001*
34. Configurational entropy in undercooled water. In *GNSM, Perugia, Italy, Dec, 2000*

Lectures and Seminars

2021

1. Antonio Scala. I fondamenti della democrazia liberale nell'era di internet. In *Lezione per il corso "ETICA E POLITICA NELL'ERA DIGITALE", Anno accademico 2020/2021, 23 Marzo 2021, Catania, 2021*

2020

2. Antonio Scala. Le leve dell'epidemia. In *"COVID-19 & BIG DATA: Impatto Economico, Epidemiologico e Social", 22 May, Webinar Mercurio Holding, 2020*
3. Antonio Scala. scienza e politica: Decision-making in tempi di crisi. In *Webinar per il Corso di laurea triennale in Scienze politiche e delle relazioni internazionali (L36) e per il corso di laurea magistrale in Scienze della Politica, della Sicurezza Internazionale e della Comunicazione Pubblica (LM62), 22 May, Univ. degli Studi della Tuscia, 2020*
4. Antonio Scala. complex networks, big data and social media intelligence. In *18 Apr, 1st lecture for the Master "Cyber Security, Digital Forensics & Computer Crime", Univ. Sapienza, Roma, 2020*

2019

5. Antonio Scala. Network physiology: a case study in dental medicine and an overview of applications to big data in health. In *Second International Summer Institute on Network Physiology (ISINP), Lake Como School of Advanced Studies, 28 Jul - 2 Aug, Como, 2019*
6. Antonio Scala. Breaking bad on social media. In *Università dell'Insubria, dip. di Scienza ed Alta Tecnologia, "IL VERO DELLE FALSE VERITÀ", 7 Feb, Como, 2019*
7. Antonio Scala. Social media e comunità disfunzionali. In *lezione comune su interazione nella comunità (liturgica) Giovannea (Gv 20) v/s nelle echo chambers, Pontificia Facoltà Teologica dell'Italia Meridionale, 9 May, Napoli, 2019*
8. Antonio Scala. Fratture e social media. In *"Io, lo straniero e il diverso in un mondo globalizzato" (Univ. degli studi di Napoli "L'Orientale" e Pontificia Facoltà Teologica dell'Italia Meridionale), evento "Ancore e naufragi nella società liquida", 04 Feb, Napoli, 2019*
9. Antonio Scala. Reti complesse e "knowledge extraction" nei dati medici. In *PhD in Physics, Univ. di Salerno, 10 May, Baronissi (SA), 2019*
10. Antonio Scala. Da lovecraft ad internet: orrori e delizie di spazi non sempre euclidei. In *MERISTEMA, Scuola di filosofia della natura e della tecnica, 24-27 Oct, Ischia (NA), 2019*
11. Antonio Scala. Complex networks, big data and social media intelligence. In *30 Nov, 5h lecture for the Master "Cyber Security, Digital Forensics & Computer Crime", Univ. Sapienza, Roma, 2019*
12. Antonio Scala. Fake news - guerra politica, interessi economici e social media: nuove tecniche di influenza e manipolazione. In *Master "Homeland Security – Sistemi, metodi e strumenti per la security e il crisis management", 9^{na} edizione, 21 Nov, Campus Biomedico, Trigatoria (RM), 2019*
13. Antonio Scala. Camere dell'eco e discussioni online. In *SWIM Science Writers in Italy, Venerdì 15 marzo 2019 15:00-19:00, Osservatorio INAF di Capodimonte, Napoli, 2019*
14. Antonio Scala. Introduzione alle reti complesse. In *Università degli Studi di Napoli L'Orientale, 9 Aprile, 2019*
15. Guerra politica e social media: nuove tecniche di influenza e manipolazione. (il ruolo dell'intelligenza artificiale). In *Corso di Alta Formazione "POLITICAL WARFARE E SICUREZZA NAZIONALE - LA NUOVA INTELLIGENCE NELL'ERA DELLE MINACCE IBRIDE", Roma, 5-6 aprile e 12-13 aprile 2019. Società Geografica Italiana - Palazzetto Mattei in Villa Celimontana, Roma, 2019*

2018

16. Dati, informazione & social media. In *Seminario per gli studenti di Scienze Politiche, LUISS, 2018*
17. Introduzione alle echo-chambers e ai modelli per l'analisi dei social media online. In *"Corso di Alta Formazione in Metodi e Tecniche per l'Analisi e il Contrasto delle Fake News", Campus Biomedico di Trigatoria, Roma, 12 e 13 ottobre, 2018*
18. Il debunking funziona? successi, fallimenti, limiti. In *"Chi tesse la rete della salute? Giornalismo autorevole o disinformazione", Corso accreditato dall'Ordine dei Giornalisti, Giovedì 8 novembre dalle ore 12:00 alle 16:30, Fiera Di Roma, Roma - Via Portuense, 1645 - Ponte Galeria, 2018*
19. Esseri digitali negli universi on-line. In *CeSPeC (Centro Studi sul Pensiero Contemporaneo) Summer School 2018 "Vite digitali. Essere umani nelle società iper-tecnologiche", 11-15 Settembre, 2018*
20. Mezzi per l'analisi quantitativa dell'infospazio. In *SIS: Safe Info Space - La sicurezza dello spazio informativo nazionale. Incontro a porte chiuse per parlamentari ed istituzioni, 20 Giugno, la Sala di Rappresentanza della regione Friuli Venezia Giulia, Piazza Colonna 355, Roma, 2018*
21. Introduction to complex networks. In *"Complex Networks and Water Distribution Systems", 19 April, Univ. vanvitelli, Real Casa dell'Annunziata, via Roma 29 Aversa (CE), 2018*
22. L'anatomia delle echochambers. In *Lezione al corso "Storia delle Dottrine Politiche" del prof. Gaetano Pecora, Univ. LUISS, Roma, 2018*
23. Disinformazione nei social media online: formazione di echo-chambers nella brexit e nel referendum 4 dicembre 2014. In *seminario su invito riservato agli addetti diplomatici delle ambasciate di Roma: "Fake News - come difendersi?" Analisi del fenomeno, 28 Febbraio alle 9.00, Ambasciata della Repubblica di Polonia, 2018*

2014-2017

24. Le dinamiche della disinformazione sul web: polarizzazione ed echo-chambers. In *Corso di Alta Formazione "Disinformazione e sicurezza nazionale. Manipolazione delle percezioni, contromisure e ruolo dell'intelligence"* 24-25 novembre & 1-2 dicembre, Società Geografica Italiana, Via della Navicella, 12, Roma, 2017
25. Misinformation e fake news in medicina. In *Comunicare in sanità: relazione di cura e cura della relazione*, Siena, Teatro Comunale dei Rinnovati, Sabato 15 luglio, 2017
26. Probabilità, statistica e paradossi. In *La mistificazione mediatica in medicina - convegno accreditato presso il Ministero della Salute (valido come crediti formativi per medici-chirurghi ed odontoiatri)*, Lucca, 25 March, 2017
27. Segregazione della (dis)informazione. In *IJF17 International Journalism Festival, workshop "Crisis management e reputazione. Fake news, real damages"*, Perugia 8 Apr, 2017
28. Systemic risk and recovery strategies in power networks and akin. In *Risk Center Seminar Series, ETH Zurich*, 12 Apr, 2016
29. Complex networks and infrastructural grids. In *Ising Lectures 2015, Institute for Condensed Matter Physics, National Acad. Sci. of Ukraine, Lviv*, 5-6 May, 2015
30. Statistical physics for power grids. In *INFN Seminar, Univ. of Napoli "Federico II", Physics dept.*, 16 Apr, 2015
31. Statistical physics of power grids. In *Biophysics-Condensed Matter Seminar, Boston University, Boston*, 13 March, 2015
32. Models for electric grids: a complex network approach. In *MIT, Pierce Laboratories, Cambridge MA*, 11 March, 2015
33. Power grids, smart grids and complex networks. In *CIPRNet Lecture @Complex Systems and Security Laboratory, Campus Biomedico, Roma + streaming for EU partner members of the CIPRNet (Critical Infrastructure Preparedness and Resilience Research Network) consortium, Roma*, Dec 4, 2014
34. Abrupt failures in simplified model power grids. In *Department of Electric and Computer Engineering, Kansas State University, March 10, 2014*

CONFERENCES

Organization

1. Organizer. ROME 2020 (Workshop on Reducing Online Misinformation Exposure), Roma, Italy. July 2, 2020
2. Organizer & Chair. Big Data In Health (I Dati A Servizio Della Salute), CNR sede centrale, Roma. 2-4 ottobre 2019
3. Scientific Organizer. Corso di Alta Formazione in "Metodi e Tecniche per l'Analisi ed il Contrasto delle Fake News". In *Master universitario di II livello in Homeland Security, Campus Biomedico, Roma*, 12-13 ottobre, 2018
4. Organizer. SIS: Safe Info Space - La sicurezza dello spazio informativo nazionale. In *Incontro a porte chiuse per parlamentari ed istituzioni*, 20 Giugno, presso la Sala di Rappresentanza della regione Friuli Venezia Giulia, Piazza Colonna 355, Roma, 2018
5. Scientific Organizer. "FAKE NEWS - COME DIFENDERSI?" Analisi del fenomeno. In *Seminario su invito riservato agli addetti diplomatici delle ambasciate di Roma*, 28 Febbraio, presso l'Ambasciata della Repubblica di Polonia, 2018
6. Organizer & Chair. NetONets "Networks of Networks". In *12th June, Paris*, 2018
7. Organizer & Chair. CRITIS 2017. In *12th International Conference on Critical Information Infrastructures Security, Lucca, Italy*, 8-13 October, 2017
8. Organizer. NetONets "Networks of Networks". In *20th June, Indianapolis*, 2017
9. Organizer & Chair. Metrology in a complex World: from Urban and Energy Systems to Social Networks. In *CeSMA (Center for Advanced Metrological Studies), University "Federico II", Napoli*, 26 July, 2016
10. Organizer & Chair. COINETs "Complexity in Interacting Networks and Systems". In *Lucca*, 25 September, 2014
11. Organizer & Chair. Complex Networks @SigmaPhi2014. In *Rodi*, 7-12 July, 2014
12. Organizer & Chair. Electro-physiological signals in living beings: data and methods of nonlinear analysis @NDES2014. In *5 July, Albena, Bulgaria*, 2014
13. Organizer & Chair. NetONets "Networks of Networks". In *June, Berkley*, 2014

14. Organizer & Chair. Focus Session on "Networks of Networks". In *APS March Meeting, Denver CO*, 2014
15. Organizer. Protezione Infrastrutture Critiche, sfide e opportunità per il prossimo triennio: lo stato dell'arte italiano ed europeo. In *Workshop AIIIC, Nov 26, Roma, Italy*, 2013
16. Organizer & Chair. "HORIZONS IN SOCIAL SCIENCE". In *July 11, IMT Lucca, Italy*, 2013
17. Organizer & Chair. NetONets "Networks of Networks". In *3-4 June, Copenhagen*, 2013
18. Organizer & Chair. Invited Session on "Statistical Physics for Systemic Risk & Critical Infrastructures". In *APS March Meeting, Baltimore*, 2013
19. Organizer & Chair. CoINets "Complexity in Interacting Networks". In *6 September, Bruxelles*, 2012
20. Organizer & Chair. NetONets "Networks of Networks". In *19 June, Chicago*, 2012
21. Organizer & Chair. Complex Networks @SigmaPhi. In *11-15 June, Cyprus*, 2011
22. Organizer & Chair. NetONets "Networks of Networks". In *7 June, Budapest*, 2011
23. Organizer & Chair. Simulation of Hard Bodies. In *16-19 Apr, Lyon*, 2007

Committees

1. Program committee. IC2S2-2021, the 7th International Conference on Computational Social Science, ETH Zurich. 27-31 July 2021
2. Program committee. COMPLEX NETWORKS 2021, The 10th International Conference on Complex Networks and their Applications, Madrid, Spain. Nov 30 - Dec 2, 2021
3. Program Committee. CRITIS 2021 (the 16th International Conference on Critical Information Infrastructures), Lausanne, Switzerland. September, 27-29
4. Program committee. COMPLEX NETWORKS 2020, The 9th International Conference on Complex Networks and their Applications, Madrid, Spain. December 1-3, 2020
5. Program committee. COMPLEX NETWORKS 2019, The 8th International Conference on Complex Networks and their Applications, Lisbon, Portugal. December 10-12, 2019
6. Program Committee. 1st Regional Chapter of the Complex Systems Society (CSS), Trento. 1-3 July 2019
7. Program Committee. ROME 2019 (Workshop on Reducing Online Misinformation Exposure), Paris, France. July 25, 2019
8. Program Committee. COMPLEXIS 2019, 4th International Conference on Complexity, Future Information Systems and Risk, Heraklio - Crete (Greece). 2-4 May 2019
9. Program Committee. CRITIS 2018 – The 13th International Conference on Critical Information Infrastructures Security, Kaunas, Lithuania. September 24-26 2018
10. Program Committee. COMPLEX NETWORKS 2018 The 7th International Conference on Complex Networks and Their Applications, Cambridge, UK. December 11-13, 2018
11. Program Committee. Applied Computational and Artificial Intelligence (ACAI) - Porto. October 5-7 2017
12. Program Committee. DSAA 2018, 5th IEEE International Conference on Data Science and Advanced Analytics - Turin (Italy). 1-4 Oct 2018
13. Program Committee. SocInfo2017, 9th International Conference on Social Informatics, Oxford UK. 12-15 Sept 2017
14. Program Committee. COMPLEX NETWORKS 2017 Lyon, France. Nov 29 - Dec 01, 2017
15. Program Committee. IC2S2 2017 3rd International Conference on Computational Social Science, Cologne, Germany. July 10-13, 2017
16. Poster chair Program Committee. COMPLEX NETWORKS 2016 The fifth International Workshop on Complex Networks and their Applications, Milan, Italy. Nov 30 - Dec 02, 2016
17. Program Committee. CRITIS 2016, the 11th International Conference on Critical Information Infrastructures Security, Paris, France. Oct 10-12, 2016
18. Program Committee. Workshop in Applied Computational and Artificial Intelligence (ACAI) at CENTERIS 2016 - International Conference on ENTERprise Information Systems, Porto Region, Portugal. 5-7 Oct 2016
19. Program Committee. Conference on Complex Systems CCS2016, Amsterdam. 19-22 Sept 2016
20. Program Committee. NETSCI 2016 International Conference on Network Science, Seoul (Korea). June 1-3 2016

21. Scientific committee. NetONets "Networks of Networks", Seoul (Korea). June 2016
22. Program Committee. IC2S2 2016 International Conference on Computational Social Science, Kellogg School of Management, Northwestern University, Evanston, IL USA. 23-26 June 2016
23. Scientific Committee. COMPENG 2016 Workshop on Complexity in Engineering, Catania (IT). 4-6 July 2016
24. Program Committee. Summer Solstice 2016 - 8th International Conference on Discrete Models of Complex Systems, University of Aveiro, Aveiro, Portugal. 20-22 June, 2016
25. Program Committee. WWW2016, 25th International World Wide Web Conference, Montreal, Canada. 11-15 April 2016
26. Program Committee. CRITIS 2015, the 10th International Conference on Critical Information Infrastructures Security, Berlin, Germany. Oct 5-7, 2015
27. Scientific committee. NetONets "Networks of Networks", Saragoza. 2 June 2015
28. Program Committee. WWW2015, 24th International World Wide Web Conference, Firenze. 18-22 May 2015
29. Program Committee. Fourth International Workshop on Complex Networks and their Applications (at SITIS 2015 conference) Bangkok, Thailand. Nov 23-27, 2015
30. Program Committee. IWcee15 International Workshop on Computational Economics and Econometric - The Complexity of Economics and the Economics of Complexity, Rome. May 28-29, 2015
31. Program Committee. SITIS 2014 - The 10th International Conference on Signal Image Technology & Internet Systems, Marrakech, Morocco. Nov 23-27, 2014
32. Scientific Committee. ECCS 2014, "European Conference on Complex Systems", Lucca. Sept 2014
33. Scientific Committee. IEEE Industrial Electronics Society Compeng 2014 "Complexity Science and Engineered Systems", Barcelona. June 16-18, 2014
34. Program Committee; Session Chair; Judge for the best poster prize poster. NetSci 2014, Berkeley. June 2-6, 2014
35. Scientific Committee. COMPUTATIONAL SOCIAL SCIENCE: from Social Contagion to Collective Behaviour, Barcelona. 19 September 2013
36. Session Chair. Fisica teorica e struttura della materia, XXIV Convegno, "Granular and Colloids" session, Levico Terme. 17-20 Sept 2006

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Roma, July 24, 2021

Antonio Scala
