

# Ciro Cattuto

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## Research Interests

Measuring and modeling complex phenomena in socio-technical systems. Computational social science, on-line social networks, information networks. Measuring and modeling human mobility and close-range proximity for infectious disease dynamics and social network analysis. Digital epidemiology, using proxy data on health-related behaviors to model risk and design interventions.

## Current Position

Scientific Director, ISI Foundation  
Research Leader, Data Science Laboratory, ISI Foundation

Research focus:

- **Social Networks and Digital Epidemiology** Measuring and modeling human mobility and proximity in large-scale real-world settings, to inform research on computational epidemiology, infectious disease dynamics, and computational social science.
- **Socio-Technical Systems.** Mining and modeling the structure and dynamics of social media and on-line social networks. Extracting signals on cultural and social dynamics from large-scale digital records of human behaviors, combining methods from data mining, machine learning, complex systems and network science.

## Employment History

09/2007 – present ISI Foundation, Torino, Italy  
05/2005 – 09/2007 Centro Studi e Ricerche “Enrico Fermi”, Roma, Italy  
04/2002 – 05/2005 RIKEN Digital Materials Laboratory, Saitama, Japan  
01/2001 – 03/2002 Physics Department of the University of Michigan, Ann Arbor, USA

- 01/2001 – 10/2001  
Software Engineer at Innominate AG  
Embedded and real-time systems, device driver design.
- 02/2000 – 01/2001  
Senior Consultant at Linuxcare Inc. (San Francisco branch, Italian branch)  
Embedded systems, device driver design, distributed systems.
- 09/1999 – 12/1999  
Visiting scientist at the University of Michigan, Ann Arbor (USA)  
Development of a framework for the event-driven simulation of granular media.
- 06/1998 – 12/2001  
Member of the INFN/CNRS VIRGO gravitational wave detector collaboration.  
Thermal noise modeling, signal processing, high performance computing.
- 07/97  
“Laurea” Degree in Physics at the University of Perugia (Italy) with a thesis on “*Elastic strings in solids*” (110/110 *summa cum laude*, grade point average 29.8/30).

## Honors and Awards

- Springer Lecturer at the European Conference on Complex Systems 2013 (ECCS2013)
- elected Council Member of the European Complex Systems Society (CSS)
- co-chair of the Network Technologies working group of the WHO Collaborating Center on Complexity Science for Health Systems (CS4HS)
- Editorial Board member of the Nature Scientific Data journal
- Editorial Board member of the EPJ Data Science journal
- New Talent post-doctoral Fellow of the Enrico Fermi research center (Centro Studi e Ricerche “Enrico Fermi”, Roma)
- Post-Doctoral Fellow of the Japan Society for the Promotion of Science (JSPS)

## Education

- 12/2001 PhD in Physics, University of Perugia, Italy  
07/1997 "Laurea" Degree in Physics, University of Perugia, Italy  
110/110 *summa cum laude*, grade point average 29.8/30

## Research and Professional Experience

- **09/2014 – present**  
Scientific Director of the ISI Foundation, Torino, Italy
- **01/2013 – 08/2014**  
Research Director of the ISI Foundation, Torino, Italy
- **09/2013**  
Visiting Professor at the Centre de Physique Théorique of the University of Marseille, Marseille, France
- **09/2012**  
Visiting Professor at the Institute for Cross-Disciplinary Physics and Complex Systems (IFISC), Palma de Mallorca, Spain
- **09/2010 – 01/2013**  
Deputy Scientific Director of the ISI Foundation, Torino, Italy
- **05/2008 – present**  
Research Leader (Data Science Laboratory) at the ISI Foundation, Torino, Italy  
Research on human proximity networks, socio-technical systems, on-line social networks.
- **05/2005 – 05/2008**  
"New Talent" Fellow at Centro Studi e Ricerche "*Enrico Fermi*", Roma  
Research on communication and self-organization in social and technological systems at Sapienza University.
- **04/2002 – 4/2005**  
Post-Doctoral Fellow and JSPS Post-Doctoral Fellow (Japan Society for the Promotion of Science) at the Digital Materials Laboratory, RIKEN, Japan  
Research on granular systems, biologically-inspired devices and superconductivity.
- **12/2001**  
PhD in Physics at the University of Perugia (Italy)  
with a thesis on "*Diffusion of thermal solitons*".
- **01/2001 – 3/2002**  
Research scientist at the Physics Department of the University of Michigan, and the Center for the Study of Complex Systems, Ann Arbor (USA)  
Non-equilibrium statistical physics and complex dynamics of granular media.

## Selected Invited Talks

- *High-resolution Social Networks for Health*, The World Bank Group, Washington DC, 11 January 2016
- *Big Data and Public Health*, European Medicines Agency, London, 18 September 2015
- *From the black box in your car to the black box society*, Brave New Data World session at Heidelberg Laureate Forum, Heidelberg (Germany), 24 August 2015
- *Dati, algoritmi, e scatole nere*, Data and Society Lecture Series at USI, Lugano (Switzerland), 21 April 2015
- *Dati, algoritmi, e scatole nere*, Biennale Democrazia, Torino (Italy), 29 March 2015
- *High-resolution social networks from wearable devices*, GESIS Computational Social Science Winter Symposium, Cologne (Germany), 1 December 2014
- *High resolution social networks for health: from sensor data to targeted interventions*, Health Informatics New Zealand 2014 conference, Auckland (New Zealand), 12 November 2014
- *Learning structures from high-resolution social network data*, ECCS14 Computational Social Science workshop, Lucca (Italy), 24 September 2014
- *Social network data from wearable sensors: opportunities and challenges*, WebSci2014 workshop on Computational Approaches to Social Modeling, Bloomington (Indiana, USA), 23 June 2014
- *Learning structures from high-resolution social network data*, NetSci2014 Symposium on Temporal Networks, Human Dynamics and Social Physics, Berkeley (California, USA), 3 June 2014
- *Temporal networks of human contact: measuring, representing and modeling*, Springer lecture at the *European Conference on Complex Systems 2013 (ECCS2013)*, Barcelona (Spain), 16 September 2013
- *Social networks across the digital-physical boundary*, Dagstuhl Seminar on Physical-Cyber-Social Computing, Dagstuhl (Germany), 29 September - 4 October 2013
- *High-resolution human contact networks: measurement, representation and modeling*, 4th Annual Workshop on Dynamic Modelling for Health Policy, Saskatoon (Canada), 16-18 July 2013
- *Time-varying networks of human contact: measuring, representing and modeling*, NetSci2013 workshop on "Temporal and Dynamic Networks: From Data to Models", Copenhagen, 3-4 June 2013
- *Measuring and representing time-varying networks of human contact*, International Workshop on "Statistical Network Science with Applications", Lorentz Center, Leiden (The Netherlands), 2-5 April 2013

- *Mining networks of human contact with wearable sensors*, workshop on “Data Science and Epidemiology”, Center for Infectious Disease Dynamics, Penn State University, PA (USA), October 6th, 2011
- *Simulating epidemics on empirical temporal networks of human contact*, workshop on “Dynamics Of and On Complex Networks V” (at the European Conference on Complex Systems 2011), Vienna (Austria), September 14th, 2011
- *Mining networks of human contact with wearable sensors*, workshop on Social Contacts and Mixing Patterns in Epidemiology, London School of Hygiene and Tropical Medicine, London, April 18th, 2011
- *Weaving on-line connections on real-world interactions*, ESF-COST High-Level Research Conference on “Future Internet and Society: A Complex Systems Perspective”, Acquafredda di Maratea (Italy), October 4th, 2010
- *Mining Social Contact with Active RFIDs*, Computer Science Colloquium of the University of Kassel, Kassel (Germany), June 24th, 2010.
- Informatics Colloquium on *Social Annotation as a Collective Exploration of a Semantic Space*, School of Informatics, Indiana University, Bloomington, IN (USA), November 14th, 2008

## Research Projects and Grants

- **SocioPatterns** (<http://www.sociopatterns.org>), co-founder and co-PI. The project is an international interdisciplinary effort that adopts a data-driven methodology to uncover fundamental patterns in social dynamics and coordinated human activity. Over the course of 7 years the collaboration carried out an experimental campaign involving more than 50,000 persons in 10 countries, building an openly-accessible atlas of human contact and mixing patterns in a variety of real-world contexts. The collected data have been used for human mobility modeling, opportunistic networks, network science and social network analysis, computational epidemiology and public health.
- **Epidemiological tools for monitoring flu in Italy**, leader of the ISI team. The project was a collaborative 2-year effort funded in 2009 by the center for disease prevention and control (Centro Nazionale per la Prevenzione e il Controllo delle Malattie, CCM) of the Italian Ministry of Health. The project carried out RFID-based measurements of human contact networks within a major Italian paediatric hospital.
- **Multiplex**, team co-leader of the ISI team (with Alessandro Vespignani). The Multiplex project (<http://www.multiplexproject.eu>) is a collaborative 3-year project funded in 2012 by the Seventh Framework Programme of the European Commission, aimed at developing a theoretical basis for understanding, predicting and controlling multi-level complex systems.
- **Studiolab**, team leader of the ISI team. The Studiolab project (<http://studiolabproject.eu>) is collaborative 3-year initiative funded in 2011 by the Seventh Framework Programme of the European Commission. The project provides a platform for creative projects that bridge divides between science, art and design.
- **Improving strategies for preventing pertussis in infants**, leader of the ISI subcontractor team. The project (grant RF-2010-2317709) is a collaborative effort funded in 2012 by the Italian Ministry of Health, with the goal of augmenting the understanding of pertussis propagation by leveraging data on close-range human proximity.
- **DataInterfaces** (<http://www.datainterfaces.org>, co-founder and co-PI). The project focuses on the development of interfaces between data and people, merging the competences of complex systems science, communication design and computer science, and leveraging state-of-the-art data processing and visualization techniques.

## Industrial Research Projects

- **Joint Venture with Pathlight Predictive Analytics** (PI of the ISI team). The joint venture is a 3-year long research collaboration between the Data Science team of the ISI Foundation and Pathlight Predictive Analytics in New York City, with an ISI Foundation 1 million dollar budget. The collaboration is focused on large-scale data analytics for Pathlight customers operating in the healthcare domain, and focused on 1) inferring psychometric customer profiles from Web-based and smartphone-based behavioral signals, and using the psychometric features to nudge health-related behaviors; 2) modeling health-related risk and forecasting health outcomes and insurance costs.
- **Intesa San Paolo bank** (PI of the ISI team). A collaboration with the Innovation Center of the Intesa San Paolo bank in Turin, Italy, aimed at creating a machine learning system for financial analysts that mines social media signals and internal documents, and maps out the relations between entities of interests (e.g., firms, influencers, investors, startups), allowing analysis to make sense of the full interaction network and to detect new connections and trends of interest. The ISI team designed the machine learning pipeline of the system and the network analytics.

## Professional Service

- editorial board member of *Nature Scientific Data* (Nature Publishing Group)
- editorial board member of the *EPJ Data Science Journal* (Springer)
- academic editor of the *PeerJ Computer Science* journal (PeerJ)
- co-chair of the inaugural Computational Health track of the **WWW2017** World Wide Web conference
- program co-chair of the **NetSci2017** Network Science conference
- co-located events co-chair of **WWW2015**
- scientific committee of the European Conference on Complex Systems 2014 (**ECCS2014**)
- program co-chair of **ACM Web Science 2014** (Bloomington, IN, USA), program committee member of **ACM Web Science 2013** (Paris)
- evaluator for the Research Executive Agency of the European Commission, for the calls FP7-PEOPLE-2009-IEF/IIF/IOF (Marie Curie fellowship grants)
- evaluator for the Austrian Science Fund (FWF)
- program committee member of the Crowd Phenomena track and of the Web Science track at **WWW2014** (International World Wide Web Conference), of the Social Networks track of **WWW2012**, of the “Data Mining and Machine Learning Track” of **WWW2010**, of the “Social Networks and Web 2.0” track of **WWW2009**
- general co-chair of **ACM Hypertext 2009**, member of the steering committee of **ACM Hypertext**, co-chair of the “Social Linking” track of **Hypertext 2008**, program committee member of Social Media track of **Hypertext 2011**, program committee member of the Student Research Competition at **Hypertext 2012**, program committee member of the social media track at **Hypertext 2013**
- senior program committee member of the **ISWC2010** International Semantic Web Conference 2010
- program committee member of **ECML PKDD 2009** (European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases) and **ECML PKDD 2010**, program committee member of the **MUSE2010** and **MUSE2011** workshops on “Mining Ubiquitous and Social Environments” (ECML PKDD 2010 and ECML PKDD 2011).
- reviewer for PLoS ONE, PNAS, Nature Scientific Reports, Nature Scientific Data, Physical Review Letters, Network Science, Physical Review E, Physical Review B, Chaos, Journal of Web Semantics, Journal of Information Systems, Journal of the American Society for Information Science and Technology, Knowledge and Information Systems, EPJ Data Science, ACM Transactions on Management Information Systems



## Teaching

I am an external Professor of Complex Systems at the Physics Department of the University of Torino (Italy). During the last few years I have taught undergraduate- and graduate-level courses on inter-disciplinary Physics and Data Science at the University of Torino.

- organizer and lecturer of the *Big Dive* course series on Data Science (<http://www.bigdive.eu>)
- undergraduate course on *Data mining: statistical modeling and learning from data* at the Physics Department of the University of Torino, academic year 2015-2016
- undergraduate course on *Data mining: statistical modeling and learning from data* at the Physics Department of the University of Torino, academic year 2014-2015
- undergraduate course on *Data mining: statistical modeling and learning from data* at the Physics Department of the University of Torino, academic year 2013-2014
- undergraduate course on *Data mining: statistical modeling and learning from data* at the Physics Department of the University of Torino, academic year 2012-2013
- undergraduate/graduate course on *Complex Systems* at the Physics Department of the University of Torino (together with Prof. Santo Fortunato and Dr. Vittoria Colizza), academic year 2009-2010
- undergraduate/graduate course on *Complex Systems* at the Physics Department of the University of Torino (together with Prof. Santo Fortunato and Dr. Vittoria Colizza), academic year 2008-2009
- lecturer on *Influence and Homophily in Social Media* at the Network Factory 2013 Summer School on Network Science
- lecturer on *Social Annotations and Social Similarity* at the 1st Spring School on Social Media Retrieval (S3MR 2010), Interlaken, Switzerland, February 2010.
- lecturer on *Structure and Evolution of Collaborative Web-Based Systems* at the Interdisciplinary College 2008, March 2008

## Selected Publications

50 publications out of 100 publications in peer-reviewed journals, peer-reviewed conference proceedings, and peer-reviewed book chapters and special journal issues. The publications of Ciro Cattuto received a total of about 5400 citations according to Google Scholar, of which more than 4000 over the last 5 years. The Google Scholar h-index for Ciro Cattuto is currently 35 (30 for the last 5 years).

### Social Networks and Digital Epidemiology

- T. Smieszek, S. Castell, A. Barrat, C. Cattuto, P.J. White, G. Krause  
BMC Infectious Diseases 16, 341 (2016)  
*Contact diaries versus wearable proximity sensors in measuring contact patterns at a conference: method comparison and participants attitudes*
- M.C. Kiti, M. Tizzoni, T.M. Kinyanjui, D.C. Koech, P.K. Munywoki, M. Meriac, L. Cappa, A. Panisson, A. Barrat, C. Cattuto, D. James Nokes  
EPJ Data Science 5(1), 1 (2016)  
*Quantifying social contacts in a household setting of rural Kenya using wearable proximity sensors*
- M.C. Pachucki, E.J. Ozer, A. Barrat, C. Cattuto  
Social Science and Medicine, 125, 40 (2015)  
*Mental health and social networks in early adolescence: A dynamic study of objectively-measured social interaction behaviors*
- N. Voirin, C. Payet, A. Barrat, C. Cattuto, N. Khanafera, C. Rgisa, B. Kima, B. Comte, J.-S. Casalegno, B. Lina and P. Vanhems  
Infection Control and Hospital Epidemiology 36, 254 (2015)  
*Combining High-Resolution Contact Data with Virological Data to Investigate Influenza Transmission in a Tertiary Care Hospital*
- V. Gemmetto, A. Barrat, C. Cattuto  
BMC Infectious Diseases 14, 695 (2014)  
*Mitigation of infectious disease at school: targeted class closure vs school closure*
- A. Barrat, C. Cattuto, A.E. Tozzi, P. Vanhems, N. Voirin  
Clinical Microbiology and Infection 20(1), 10 (2014)  
*Measuring contact patterns with wearable sensors: methods, data characteristics and applications to data-driven simulations of infectious diseases*
- A. Machens, F. Gesualdo, C. Rizzo, A.E. Tozzi, A. Barrat and C. Cattuto  
BMC Infectious Diseases 13:185 (2013)  
*An infectious disease model on empirical networks of human contact: bridging the gap between dynamic network data and contact matrices*

- J. Stehle, F. Charbonnier, T. Picard, C. Cattuto, A. Barrat  
Social Networks 35, 604 (2013)  
*Gender homophily from spatial behavior in a primary school: A sociometric study*
- M. Starnini, A. Machens, C. Cattuto, A. Barrat, R. Pastor-Satorras  
Journal of Theoretical Biology 337, 89 (2013)  
*Immunization strategies for epidemic processes in time-varying contact networks*
- A. Barrat, C. Cattuto  
book chapter in "Temporal Networks", edited by Petter Holme and Jari Saramaki,  
Springer (2013)  
*Temporal Networks of Face-to-face Human Interactions*
- L. Gauvin, A. Panisson, C. Cattuto, A. Barrat  
Nature Scientific Reports 3, 3099 (2013)  
*Activity clocks: spreading dynamics on temporal networks of human contact*
- P. Vanhems, A. Barrat, C. Cattuto, J.-F. Pinton, N. Khanafer, C. Regis, B. Kim, B. Comte, N. Voirin  
PLoS ONE 8(9), e73970 (2013)  
*Estimating potential infection transmission routes in hospital wards using wearable proximity sensors*
- C. Scholz, M. Atzmueller, A. Barrat, C. Cattuto, G. Stumme  
Proc. International Conference on Weblogs and Social Media 2013 (ICWSM13)  
*New Insights and Methods for Predicting Face-to-face Contacts*
- M. Salathé, L. Bengtsson, T.J. Bodnar, D.D. Brewer, J.S. Brownstein, C. Buckee, E.M. Campbell, C. Cattuto, S. Khandelwal, P.L. Mabry, A. Vespignani  
PLoS Computational Biology 8(7), e1002616 (2012)  
*Digital Epidemiology*
- A. Panisson, A. Barrat, C. Cattuto, W. Van den Broeck, G. Ruffo, R. Schifanella  
Ad Hoc Networks 10, 1532 (2012)  
*On the Dynamics of Human Proximity for Data Diffusion in Ad-Hoc Networks*
- J. Stehlé, N. Voirin, A. Barrat, C. Cattuto, L. Isella, J.-F. Pinton, M. Quaghiotto, W. Van den Broeck, Corinne Regis, B. Lina, P. Vanhems  
PLoS ONE 6(8), e23176 (2011)  
*High-Resolution Measurements of Face-to-Face Contact Patterns in a Primary School*
- J. Stehlé, N. Voirin, A. Barrat, C. Cattuto, V. Colizza, L. Isella, C. Regis, J.-F. Pinton, N. Khanafer, W. Van den Broeck and P. Vanhems  
BMC Medicine 9:87 (2011)  
*Simulation of an SEIR infectious disease model on the dynamic contact network of conference attendees*

- L. Isella, M. Romano, A. Barrat, C. Cattuto, V. Colizza, W. Van den Broeck, F. Gesualdo, E. Pandolfi, L. Ravà, C. Rizzo, A.E. Tozzi  
PLoS ONE 6(2), e17144 (2011)  
*Close encounters in a pediatric ward: measuring face-to-face proximity and mixing patterns with wearable sensors*
- L. Isella, J. Stehlé, A. Barrat, C. Cattuto, J.-F. Pinton and W. Van den Broeck  
Journal of Theoretical Biology 271, 166 (2011)  
*What's in a crowd? Analysis of face-to-face behavioral networks*
- C. Cattuto, W. Van den Broeck, A. Barrat, V. Colizza, J.-F. Pinton, A. Vespignani,  
PLoS ONE 5(7), e11596 (2010)  
*Dynamics of Person-to-Person Interactions from Distributed RFID Sensor Networks*

## Network Science and Social Media

- M. Génois, C. L. Vestergaard, C. Cattuto, A. Barrat  
Nature Communications 6, 8860 (2015)  
*Compensating for population sampling in simulations of epidemic spread on temporal contact networks*
- A. Sapienza, A. Panisson, J. Wu, L. Gauvin, C. Cattuto  
Proc. 5th IEEE ICDM Workshop on Data Mining in Networks (2015)  
*Detecting anomalies in time-varying networks using tensor decomposition*
- L. Gauvin, A. Panisson, C. Cattuto  
PLoS ONE 9(1), e86028 (2014)  
*Detecting the community structure and activity patterns of temporal networks: a non-negative tensor factorization approach*
- J. Lehmann, B. Goncalves, J. Ramasco, C. Cattuto  
Proceedings of the 21th International World Wide Web Conference (WWW2012)  
*Dynamical Classes of Collective Attention in Twitter*
- L.M. Aiello, A. Barrat, R. Schifanella, C. Cattuto, B. Markines, F. Menczer  
ACM Transactions on the Web, volume 6(2), 9 (2012)  
*Friendship prediction and homophily in social media*
- L.M. Aiello, A. Barrat, C. Cattuto, R. Schifanella and G. Ruffo  
EPJ Data Science 1:12 (2012)  
*Link creation and information spreading over social and communication ties in an interest-based online social network*

- L. Aiello, A. Barrat, C. Cattuto, G. Ruffo, R. Schifanella,  
 Proceedings of the 2nd IEEE International Conference on Social Computing (Social-Com2010), 2010  
*Link creation and profile alignment in the aNobii social network*
- M. Szomsor, C. Cattuto, W. Van den Broeck, A. Barrat, H. Alani,  
 Proceedings of the 7th Extended Semantic Web Conference (ESWC2010), 2010.  
*Semantics, Sensors, and the Social Web: The Live Social Semantics experiments*
- R. Schifanella, A. Barrat, C. Cattuto, B. Markines, F. Menczer,  
 Proceedings of the 3rd ACM International Conference on Web Search and Data Mining (WSDM2010)  
*Folks in folksonomies: Social link prediction from shared metadata*
- H. Alani, M. Szomszor, C. Cattuto, W. Van den Broeck, G. Correndo, A. Barrat,  
 Lecture Notes in Computer Science 5823, 698-714 (2009)  
 Proceedings of the 8th International Semantic Web Conference (ISWC2009)  
*Live Social Semantics*
- C. Cattuto, A. Barrat, A. Baldassarri, V. Loreto,  
 Proceedings of the National Academy of Sciences of the USA (PNAS) 106, 10511 (2009)  
*Collective dynamics of social annotation*
- B. Markines, C. Cattuto, F. Menczer,  
 Proceedings of the 5th International Workshop on Adversarial Information Retrieval on the Web (AIRWeb2009), 41 (2009)  
*Social Spam Detection*
- B. Markines, C. Cattuto, F. Menczer, D. Benz, A. Hotho, G. Stumme,  
 Proceedings of the 18th International World Wide Web Conference (WWW2009), 641-650 (2009)  
*Evaluating Similarity Measures for Emergent Semantics of Social Tagging*
- C. Cattuto, D. Benz, A. Hotho, G. Stumme,  
 Lecture Notes in Computer Science 5318, 615-631 (2008)  
*Semantic Grounding of Tag Relatedness in Social Bookmarking Systems*  
 7th International Semantic Web Conference ISWC2008  
 (nominated for best paper award)
- C. Cattuto, C. Schmitz, A. Baldassarri, V. D. P. Servedio, V. Loreto, A. Hotho, M. Grahl, G. Stumme,  
 AI Communications 20, 245 (2007)  
 Special Issue on Network Analysis in Natural Sciences and Engineering  
*Network Properties of Folksonomies*

- C. Cattuto, V. Loreto, and L. Pietronero,  
Proceedings of the National Academy of Sciences of the USA (PNAS) 104, 1461  
(2007)  
*Semiotic dynamics and collaborative tagging*
- C. Cattuto, V. Loreto, V. D. P. Servedio,  
Europhysics Letters 76, 208 (2006)  
*A Yule-Simon process with memory*
- C. Cattuto  
Eur. Phys. J. C 46, s2.33 (2006)  
*Semiotic Dynamics in Online Social Communities*

### Biocomplexity

- H. Tettelin, D. Riley, C. Cattuto, D. Medini,  
Current Opinion in Microbiology 12, 1-6 (2008)  
*Comparative genomics: the bacterial pan-genome*

### Statistical Physics of Granular Media

- C. Cattuto, R. Brito, U. Marini Bettolo Marconi, F. Nori, R. Soto,  
Phys. Rev. Lett. 96 178001 (2006)  
*Fluctuation-induced Casimir forces in granular fluids*
- G. Costantini, D. Paolotti, C. Cattuto and U. Marini Bettolo Marconi,  
Physica A 347, 411 (2005)  
*Bistable clustering in Driven Granular Mixtures*
- C. Cattuto, U. Marini Bettolo Marconi,  
Phys. Rev. Lett. 92, 174502 (2004)  
*Ordering phenomena in cooling granular mixtures*
- D. Paolotti, C. Cattuto, U. Marini Bettolo Marconi and A. Puglisi,  
Granular Matter 5, 75 (2003)  
*Dynamical properties of vibrofluidized granular mixtures*

### Statistical Physics of Nonlinear Excitations

- S. Savel'ev, C. Cattuto, F. Nori,  
Phys. Rev. B Rapid. Comm. 67, 180509(R) (2003)  
*Force-free current-induced re-entrant melting of the vortex-lattice in superconductors*

- C. Cattuto, G. Costantini, T. Guidi, F. Marchesoni,  
Phys. Rev. B **63**, 094308 (2001)  
*Elastic strings in solids: Discrete kink diffusion*
- C. Cattuto, G. Costantini, T. Guidi, F. Marchesoni,  
Phys. Rev. E **63**, 046611 (2001)  
*Driven kinks in discrete chains: Phonon damping*
- F. Marchesoni, C. Cattuto and G. Costantini  
Phys. Rev. B **57**, 7930 (1998)  
*Elastic Strings in Solids: Thermal Nucleation*
- C. Cattuto and F. Marchesoni  
Phys. Rev. Lett. **79**, 5070 (1997)  
*Unlocking of an Elastic String from a Periodic Substrate*

### Signal Processing

- P. Amico, L. Bosi, C. Cattuto, L. Gammaitoni, M. Punturo, F. Travasso, H. Vocca,  
Classical and Quantum Gravity **21**, S847 (2004)  
*A computational test facility for distributed analysis of gravitational wave signals*
- F. Acernese et al., Classical and Quantum Gravity **20**, S915 (2003)  
*Data analysis methods for non-Gaussian, nonstationary and nonlinear features and their application to VIRGO*

### Patents

- C. Cattuto, M. Meriac, B. Meriac, W. Van den Broeck, A. Barrat, J.-F. Pinton  
*Wireless hardware device for detecting relations of distance, and system for monitoring relations of distance between wireless hardware devices*  
European Patent EP2261688 B1  
Priority date: May 27, 2009. Publication date: March 27, 2013.
- C. Cattuto, M. Meriac, B. Meriac, W. Van den Broeck, A. Barrat, J.-F. Pinton  
*Wireless hardware device for detecting relations of distance, and system for monitoring relations of distance between wireless hardware devices*  
US Patent US8660490 B2  
Priority date: May 27, 2009. Granted, Publication date: February 25, 2014.

## Press

20 articles in the national and international (Italian, French, Irish) press out of 50 among articles, interviews, radio interviews and TV features.

- Il Sole 24 Ore, *Ebola, ecco la mappa interattiva: cos il virus viene visto su Twitter*, 21 October 2014
- RAI News, *Ebola virale su Twitter. Una mappa italiana mostra in tempo reale come e dove si parla del virus*, 21 October 2014
- Scientific American, *RFID Tags Track Possible Outbreak Pathways in the Hospital*, November 2012
- La Stampa, *Molti numeri, grande scienza*, 14 March 2012
- MIT Technology Review, *Human Networks And Causality Cones*, 9 June 2010
- Science, *Spreading the flu*, 22 May 2009
- Wired Science, *Visualized: A School Day as Data*, 19 August 2011
- ScientificAmerican.com, *Tag, You're It: Scientists Describe Collaborative Tagging Sites like Del.icio.us*, 23 January 2007
- ScienceNOW, *Face to Face With Human Mobility Research*, 5 July 2010
- ScienceNOW, *Folk Wisdom for Web Sites*, January 2007
- WIRED (GeekDad blog), *Disecting Diseases in Dublin With Your Kids?*, 5 May 2009
- Irish Times, *Where the odds are stacked in favour of contagion*, 4 May 2009
- La Recherche, *Internet change-t-il les relations humaines?*, issue 464, May 2012
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