Stefano Lepri

Curriculum vitae

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Personal data

- Born in Florence (Italy) on October 23 1966
- Italian citizen, married with one son.

Education

1993 – 1996 **Ph.D. in Physics**, *University of Bologna*.
thesis title "Lyapunov Analysis of Spatiotemporal Chaos" (advisor prof. R. Livi)

1992 **Degree in physics (*Laurea*)**, *University of Florence*, grade 110/110 *cum laude*.
thesis title "Complexity and chaos in high-dimensional systems" (supervisor prof. F.T. Arecchi).

1985 **High-school graduate (*Maturità scientifica*)**.
grade 60/60

Professional record

2010 – 2017 **Senior Researcher**, *Consiglio Nazionale delle Ricerche, Istituto dei Sistemi Complessi*, Sesto Fiorentino.

2004 – 2009 **Researcher**, *Consiglio Nazionale delle Ricerche, Istituto dei Sistemi Complessi*, Sesto Fiorentino.

2003 – 2004 **Researcher**, *Istituto Nazionale di Fisica della Materia*, Unità di Ricerca di Firenze.

2003 **Collaborator**, *Istituto Nazionale di Ottica Applicata*, Firenze.
Research Project: *Stochastic processes in vertical–cavity lasers*

1999 - 2003 **PostDoc**, *Dipartimento di Energetica, Università di Firenze e Istituto Nazionale di Fisica della Materia*.
Research project: *Equilibrium and nonequilibrium dynamics in condensed-matter*

1997 –1999 **PostDoc**, *Max-Planck-Institut für Physik komplexer Systeme*, Dresden.

Qualifications

2017 **National scientific qualification (ASN)**, *professor level I*.
02/B2–*Theoretical condensed matter physics* and 02/A2–*Theoretical physics of fundamental interactions*

2014 **National scientific qualification (ASN)**, *professor level II*.
02/B2–*Theoretical condensed matter physics*

2002 **Qualification**, *Maître de Conférences*, French National Education Ministry.
Sections 28–*Milieux denses et matériaux* and 29 –*Constituants Elementaires*

Research interests

- Nonlinear dynamics and statistical mechanics of classical many-body systems:

  - Relaxation phenomena, thermalization, and stationary heat transport in one- and two dimensional lattices
  - Nonlinear localized excitations (solitons, kinks, breathers)
- Stochastic processes in semiconductor lasers and amplifying media.
- High-dimensional chaos in delayed and extended systems.

Foreign languages

- English (written and spoken, fluent)
- German, french (spoken)

Computer knowledge

- Fortran, Matlab,Python; LaTeX e HTML.
- Linux e Windows operating systems.
- Computational methods, molecular dynamics.

Funding

- Research scholarship 91673361, DAAD funding programme *Research stays for university academics and scientists, 2017*.
- Project CEA-02 EUROfusion Enabling Research *Eskape* (2017-2019);
- Progetto Miur Prin 2008 *Efficienza delle macchine termoelettriche: un approccio microscopico*; vice-project manager 2010-2012, ca. 20 k€
- Individual research grant, Swiss National Research Foundation, *Disorder, localization and transport in nonlinear systems* Institute de Physique Theorique Ecòle Politechnique Fedèrale, Losanna, 2200 CHF, May 2008
- Progetti supercalcolo 2007 - Fisica della Materia: *Anomalous transport and diffusion in one-dimensional systems* (rif. CINECA n.765); project manager, year 2007
- Progetti supercalcolo 2006 - Fisica della Materia : *Transport and fluctuations in low-dimensional systems* (rif. CINECA n.577); project manager, year 2006
- Iniziativa Calcolo Parallelo INFM-CINECA: *Simulating energy transport in low-dimensional systems* (rif. CINECA n.320); project manager, year 2004
- *Bourse d'acqueil* region Rhône-Alpes, Ecòle Normale Superieure de Lyon: *Dynamique et thermodynamique hors equilibre des systemes discrets*, 72000 FF, March-September 2001

Conference organization

2015 **Local organizer**, *Mini-workshop Paths through chaos and complexity*, CNR, Sesto fiorentino.

2014 **Local organizer**, *Advances in nonequilibrium statistical mechanics*, Galileo Galilei Institute, Florence.

2014 **Member of organizing commitee**, *ISCS 2014 Interdisciplinary Symposium on Complex Systems*, Galileo Galilei Institute, Florence.

2013-2014 **Member of organizing commitee**, *Convegno nazionale di fisica statistica e sistemi complessi*, XVIII-XIX editions, Parma.

Other roles

2015– **Editor**, *Chaos, Solitons and Fractals: The interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena*, Elsevier.

2016 **Volume Editor**, *Thermal Transport in Low Dimensions: From Statistical Physics to Nanoscale Heat Transfer*, Springer Lecture Notes in Physics, Volume 921. (2016)

2005- **Referee**, *for national funding agencies (China, Cile, Estonia, Israel)*.

1998- **Referee**, *for Physical Review Letters, Physical Review E,B, Journal of Physics, Chaos, Physica D, Physics Letters, Scientific Reports, New Journal of Physics etc..*

Assignments

2015–2018 **Member of Institute committee**, *(Consiglio di Istituto)*, CNR-ISC.

2015– **Institute project manager** , *DFM.AD004.012 / Dinamica di sistemi complessi*, CNR-ISC.

Invited seminars

2017 *The nonequilibrium discrete nonlinear Schrödinger equation* Trieste Quantum days 2017, SISSA Trieste

2016 *Nonreciprocal wave scattering on nonlinear string-coupled oscillators* Euromech Colloquium 580, Grenoble

2015 *Anomalous fluctuations in nonlinear oscillator chains* FisMat15, Palermo

The nonequilibrium, discrete nonlinear Schrödinger equation, New frontiers in nonequilibrium physics 2015, Kyoto

2014 *Anomalous diffusion of phonons in one dimension*, Workshop Nanophononics for thermal transfer, le Mans

2013 *Fluctuations in a diffusive medium with gain* Conference Large Deviations and Rare Events in Physics and Biology, Rome

Asymmetric wave propagation through nonlinear lattices Focus workshop From Dynamics to Statistical Physics and Back, Dresden

Heat conduction in low-dimensional lattices Tutorial lectures at the First International Conference on Phononics and Thermal Energy Science, Shanghai

2012 *The nonequilibrium discrete nonlinear Schrödinger equation* Workshop Nonequilibrium statistical mechanics: mathematical understanding and numerical simulations, Banff

Anomalous diffusion in Lévy glasses Department of physics and astronomy, University College of London

Asymmetric wave propagation in the open, discrete nonlinear Schroedinger equation 2nd Conference on localized excitations in nonlinear complex systems (LENCOS12), Sevilla

The nonequilibrium discrete nonlinear Schroedinger equation Advanced Workshop on Energy Transport in Low-Dimensional Systems: Achievements and Mysteries, ICTP, Trieste

2011 *A stochastic model of anomalous heat transport* Workshop Foundations and applications of nonequilibrium statistical mechanics, Stockholm

Nonreciprocal wave propagation in a nonlinear system XV Workshop on Statistical Mechanics and nonperturbative Field Theory, Bari

A stochastic model of anomalous heat transport Semestre thematique Dynamique des systemes complexes, Universitè Cergy-Pontoise

A stochastic model of anomalous heat transport 31eme Rencontre de Physique Statistique, ESPCI Paris

2010 *Nonreciprocal wave propagation in a nonlinear system* EPS-EPSD Workshop Heat control and thermoelectric efficiency, Erice

2009 *Energy propagation in disordered nonlinear chains* Workshop Pseudochaos and stable chaos in statistical mechanics and Quantum physics, ICTP Trieste

Nonequilibrium invariant measure and anomalous heat conduction XIV Convegno Nazionale di Fisica statistica e sistemi complessi, Parma

2008 *Energy propagation in disordered nonlinear chains* SIAM conference on Nonlinear Waves and Coherent Structures (NW08), Roma

2007 *Statistical regimes of random laser fluctuations* International school on complexity: Complex Optics in Mesoscopic Materials, Erice

Anomalous heat transport in 1D many particles models StatPhys23, Genova

Anomalous heat conductivity in 1D lattices 382. Wilhelm und Else Heraeus-Seminar Thermal Transport and Relaxation: Foundations and Perspectives, Bad Honnef

2006 *Anomalous heat conductivity in 1D lattices* International workshop Nonlinear dynamics of acoustic modes in finite lattices, Dresden

Anomalous heat transport in one dimension First Italian-Australian workshop on statistics physics, Surfers' Paradise

2005 *Mode-coupling theory of anomalous transport in 1D* X Convegno Nazionale di Fisica statistica e sistemi complessi, Parma

Stochastic dynamics in multimode lasers Workshop Towards the future of complex dynamics: from laser to brain, Dresden.

2003 *Anomalous heat conductivity in nonlinear lattices* NATO Advanced research Workshop (ARW) "Intrinsic Localized Modes and Discrete Breathers in Nonlinear Lattices", Erice

2002 *Stationary energy transport in nonlinear lattices* Workshop Localization and energy transfer in nonlinear systems San Lorenzo de El Escorial, Madrid

2001 *Pattern formation and localization in drived-damped anharmonic lattices* INFMeeting, Roma

Localization and approach to equilibrium in anharmonic lattices Workshop 'Nonlinear Lattices Structure and Dynamics', Dresden.

2000 *Heat conduction in nonlinear lattices* meeting Universal fluctuations in Correlated Systems, ENS Lyon

1998 *Conducibilità termica, limite termodinamico e equazione di Fourier* meeting "Problemi attuali di Fisica Teorica", Vietri sul Mare.

Relaxation and transport in anharmonic chains Ecole Nationale Superieure, Lyon

1997 *Esponenti di Lyapunov cronotopici* Dipartimento di Matematica, Università di Bologna.

Heat transport in chaotic chains International school and workshop "Chaos and irreversibility: classical aspects" Bolyai College, Eötvos University, Budapest

1996 *Chronotopic Lyapunov analysis* I Convegno Nazionale di Fisica statistica, Parma

Lyapunov exponents for extended 1d systems Department of physics, University of Wuppertal.

Teaching

2016 **Lecturer**, *University of Florence*, course "Dynamical systems theory".

2015 **Supervisor**, *Bsc thesis in physics of M. Torricelli*, University of Florence.

2014 **Supervisor**, *Bsc thesis in physics of F. Del Santo*, University of Florence.

2013 **Supervisor**, *Master thesis in physics of P. Bernabó* , University of Florence.

2011–2013 **Supervisor**, *Ph.D. thesis in physics of S. Iubini* , University of Florence.

2008-2009 **Lecturer**, *University of Florence*, course Introduction to non equilibrium phenomena, Ph.D. Course in Nonlinear dynamics and complex systems.

2004–2007 **Supervisor**, *Ph.D. thesis in nonlinear dynamics and complex systems of L. Delfini* , University of Florence.

1999–2002 **Lecturer**, *University of Florence*, undergraduate course "General Physics I" (Mechanics) Degree in Environmental Engineering.

1998 **Lecturer**, *University of Florence*, course "Lyapunov exponents for extended dynamical systems", Ph.D. Course in Physics.

Bibliometric data

About 75 articles in peer-reviewed international journals, more than 2700 citations. Coauthor of the paper *Thermal conduction in classical low-dimensional lattices* Phys. Rep 377-1 (2003) with more than 730 citations; 3 papers with more that 100 citations. h-index (August 2017): 23 (Scopus and ISI-WoK); 28 (Google Scholar) .

Publications

1. S. Lepri, G. Giacomelli, A. Politi , F.T. Arecchi
   High-dimensional chaos in delayed dynamical systems
   Physica D 70 235 (1994).
2. S. Lepri
   Critical phenomena in delayed maps
   Phys. Lett. A 191 291 (1994).
3. G. Giacomelli, S. Lepri , A. Politi
   Statistical properties of bidimensional patterns generated by delayed and extended maps
   Phys. Rev. E 51 3939 (1995).
4. S. Lepri, A. Politi , A. Torcini
   Chronotopic Lyapunov analysis: (I) a detailed characterization of 1d systems
   J. Stat. Phys., 82 5/6 1429 (1996).
5. S. Lepri, A. Politi , A. Torcini
   Chronotopic Lyapunov analysis: (II) towards a unified approach
   J. Stat. Phys. 88, 1/2 31 (1997).
6. A. Torcini , S. Lepri
   Disturbance propagation in chaotic extended systems with long range coupling
   Phys. Rev. E 55 R3805 (1997).
7. S. Lepri, R. Livi, A. Politi
   Heat conduction in chains of nonlinear oscillators
   Phys. Rev. Lett. 78, 1896 (1997).
8. S. Lepri, A. Politi, A. Torcini
   Entropy potential and Lyapunov exponents
   Chaos 7(4) 701 (1997).
9. S. Lepri, R. Livi, A. Politi
   Energy transport in anharmonic lattices close and far from equilibrium
   Physica D 119 140(1998)
10. S. Lepri, R. Livi, A. Politi
    On the anomalous thermal conductivity of one-dimensional lattices
    Europhys. Lett. 43(3) 271 (1998).
11. S. Lepri, W. Just
    Mean-field theory of critical coupled map lattices
    J. Phys. A 31 (29) 6175 (1998).
12. S. Lepri
    Relaxation of classical many-body hamiltonians in one dimension
    Phys. Rev. E 58 7165 (1998).
13. Yu. A. Kosevich, S. Lepri
    On modulational instability and energy localization in anharmonic lattices at finite energy density
    Phys. Rev. B 61 (1) 299 (2000).
14. S. Lepri, L. Rondoni, G. Benettin
    The Gallavotti-Cohen fluctuation theorem for a non-chaotic model
    J. Stat. Phys. 99 3/4 (2000).

15. S. Lepri
Memory effects and heat transport in one-dimensional insulators
Eur. Phys. J. B 18 441 (2000).
16. S. Lepri, S. Ruffo
Finite-size effects on the hamiltonian dynamics of the XY model
Europhys. Lett. 55, 512 (2001).
17. R. Khomeriki, S. Lepri, S. Ruffo
Pattern formation and localization in the forced-damped Fermi-Pasta-Ulam lattice
Phys. Rev. E 64, 056606 (2001)
18. F. Piazza, S. Lepri, R. Livi
Slow energy relaxation and localization in 1d lattices
J. Phys. A: Math. Gen. 34, 9803 (2001).
19. R. Khomeriki, S. Lepri and S. Ruffo
Excitation of travelling breathers in anharmonic chains
Physica D 168-169, 152 (2002).
20. S. Lepri, R. Livi, A. Politi
Thermal conduction in classical low-dimensional lattices
Phys. Reports 377 1 (2003).
21. R. Livi, S. Lepri
Heat in one dimension
Nature (News and Views) 421 327 (2003).
22. F. Piazza, S. Lepri, R. Livi
Cooling nonlinear lattices toward energy localization
Chaos 13 (2) 637 (2003).
23. S. Barbay, G. Giacomelli, S. Lepri, A. Zavatta
Experimental study of stochastic phase synchronization in vertical-cavity lasers
Phys. Rev. E 68, 020101(R) (2003).
24. S. Lepri, R. Livi, A. Politi
On the universality of anomalous one-dimensional heat conductivity
Phys. Rev. E 68 067102 (2003).
25. M. Barbi, S. Lepri, M. Peyrard, N. Theodorakopoulos
Thermal denaturation of the helicoidal DNA model
Phys. Rev. E 68, 061909 (2003).
26. S.Barbay, G. Giacomelli, S. Lepri, A. Zavatta
An experimental study of stochastic phase synchronization in vertical cavity lasers
Fluctuation and Noise Letters, Vol. 3, No. 2 L12 (2003).
27. J.A. Freund, S. Barbay, S. Lepri, A. Zavatta, G. Giacomelli
Noise-induced phase synchronization: theoretical and experimental results
Fluctuation and Noise Letters Vol. 3, No. 2 L195 (2003).
28. T. Dauxois, S. Lepri, S. Ruffo
Clustering and ensemble inequivalence in the ϕ^4 and ϕ^6 mean-field hamiltonian models
Communications in Nonlinear Science and Numerical Simulation, 8 375 (2003).
29. S.Barbay, G. Giacomelli, S. Lepri, F. Marin, I. Rabbiosi, A. Zavatta
Experimental investigation of stochastic processes in vertical cavity lasers
atti della conferenza *Medyfinol 2002*, Physica A (2003).
30. R. Khomeriki, S. Lepri, S. Ruffo
Nonlinear supratransmission and bistability in the Fermi-Pasta-Ulam model
Phys. Rev. E 70, 066626 (2004).
31. S. Lepri, R. Livi, A. Politi
Studies of thermal conductivity in Fermi-Pasta-Ulam-like lattices (invited)
Chaos 15, 015118 (2005)
32. L. Delfini, S. Lepri, R. Livi

A simulation study of energy transport in the hamiltonian XY model
J. Stat. Mech. (2005) P05006

33. M. Eleftheriou, F. Piazza, S. Lepri, R. Livi
Stretched exponential relaxation in arrays of coupled rotators
Physica D 204/3-4, 230 (2005)
34. S. Lepri, P. Sandri, A. Politi
The one-dimensional Lennard-Jones system: collective fluctuations and breakdown of hydrodynamics
Eur. Phys. J. B 47, 549 (2005)
35. F.Pedaci, S. Lepri, S. Balle, G. Giacomelli, M. Giudici, J. Tredicce
Multiplicative noise in the longitudinal mode dynamics of a bulk semiconductor laser
Phys. Rev. E 73, 041101 (2006)
36. L. Delfini, S. Lepri, R. Livi, A. Politi
Self-consistent mode-coupling approach to 1D heat transport
Phys. Rev. E 73, 060201(R) (2006)
37. L. Delfini, S. Lepri, R.Livi, A. Politi
Anomalous kinetics and transport from 1D self–consistent mode–coupling theory
J. Stat. Mech. (2007) P02007
38. S. Lepri, S. Cavalieri, G-L. Oppo, D. S. Wiersma
Statistical regimes of random laser fluctuations
Phys. Rev. A 75, 063820 (2007).
39. L. Delfini, S. Denisov, S. Lepri, R. Livi, P. Mohanty, A. Politi
Energy diffusion in hard-point systems
Eur. Phys. J. Special Topics 146, 21 (2007).
40. S. Lepri, G. Giacomelli
Resonant activation in bistable semiconductor lasers
Phys. Rev. A. 76, 023815 (2007).
41. G.Basile, L. Delfini, S. Lepri, R. Livi, S. Olla, A. Politi
Anomalous transport and relaxation in classical one-dimensional models
Eur. Phys. J. Special Topics 151, 85 (2007).
42. L. Delfini, S. Lepri, R. Livi, A. Politi
Comment on "Equilibration and Universal Heat Conduction in Fermi-Pasta-Ulam Chains"
Phys. Rev. Lett. 100, 199401 (2008).
43. L. Delfini, S. Lepri, R. Livi, A. Politi
Nonequilibrium invariant measure under heat flow
Phys. Rev. Lett. 101, 120604 (2008).
44. S. Lepri, C. Mejía-Monasterio, A. Politi
A stochastic model of anomalous heat transport: analytical solution of the steady state
J. Phys. A: Math. Theor. 42 025001 (2009) .
45. F. Piazza, S. Lepri
Heat wave propagation in a nonlinear chain
Phys. Rev. B 79, 094306 (2009).
46. M. Johansson, G. Kopidakis, S. Lepri, S. Aubry
Transmission thresholds in time-periodically driven nonlinear disordered systems
EPL 86 10009 (2009)
47. S. Lepri, C. Mejía-Monasterio, A. Politi
Nonequilibrium dynamics of a stochastic model of anomalous heat transport
J. Phys. A: Math. Theor. 43 (2010) 065002.

Selected article for Journal of Physics Highlights of 2010 collection

48. S. Lepri, C. Mejía-Monasterio, A. Politi
Nonequilibrium dynamics of a stochastic model of anomalous heat transport: numerical analysis
J. Phys. A: Math. Theor. 43 (2010) 145001.

49. R. Burioni, L. Caniparoli, S. Lepri, A. Vezzani
Levy-type diffusion on one-dimensional directed Cantor graphs
Phys. Rev. E 81, 011127 (2010).
50. J. Bertolotti, K. Vynck, L. Pattelli, P. Barthelemy, D.S. Wiersma, S. Lepri
Engineering Disorder in Superdiffusive Lévy Glasses
Adv. Funct. Mater. 20 Issue 6 , Pages 965-968 (2010)
51. P. Barthelemy, J. Bertolotti, K. Vynck, S. Lepri, D.S. Wiersma
Role of quenching on superdiffusive transport in 2D random media
Phys. Rev. E 82, 011101 (2010).
52. S. Lepri, R. Schilling, S. Aubry
Asymptotic energy profile of a wave packet in disordered chains
Phys. Rev. E 82, 056602 (2010).
53. A. Vezzani, R. Burioni, L. Caniparoli, S. Lepri
Local and average behaviour in inhomogeneous superdiffusive media
Philosophical Magazine 1478-6435 (2011).
54. S. Lepri, A. Politi
Density profiles in open superdiffusive systems
Phys. Rev. E 83, 030107(R) (2011)
55. S. Lepri, G. Casati
Asymmetric wave propagation in nonlinear systems
Phys. Rev. Lett.106, 164101 (2011)

Featured article in:
Physical Review Focus, *One-way light*, focus.aps.org/story/v27/st15
cnr.it Highlights 2010-2011, www.cnr.it/documenti/HIGHLIGHTS2010_2011.pdf

56. S.Luccioli, A.Imparato, S.Lepri, F.Piazza, A.Torcini
Discrete Breathers in a realistic coarse-grained model of proteins
Phys. Biol. 8 046008 (2011)
57. S. Iubini, S. Lepri, A. Politi
Nonequilibrium discrete nonlinear Schroedinger equation
Phys. Rev. E 86, 011108 (2012).
58. R. Burioni, S. Di Santo, S. Lepri, A. Vezzani
Scattering lengths and universality in superdiffusive Lévy materials
Phys. Rev. E 86, 031125 (2012).
59. J. D'Ambroise, P. G. Kevrekidis, S. Lepri
Asymmetric wave propagation through nonlinear PT-symmetric oligomers
J. Phys. A: Math. Theor. 45 (2012) 444012.
60. H. Bufferand, G. Ciraolo, Ph. Ghendrih, S. Lepri, R. Livi
Particle model for nonlocal heat transport in fusion plasmas
Phys. Rev. E 87, 023102 (2013).
61. S. Lepri, B. A. Malomed
Symmetry breaking and restoring wave transmission in diode-antidiode double chains
Phys. Rev. E 87, 042903 (2013) .
62. J. D'Ambroise, P. G. Kevrekidis, S. Lepri
Eigenstates and instabilities of chains with embedded defects
Chaos 23, 023109 (2013)
63. S. Lepri
Fluctuations in a Diffusive Medium with Gain
Phys. Rev. Lett.110, 230603 (2013)
64. S. Iubini, S. Lepri, R. Livi, A. Politi
Off-equilibrium Langevin dynamics of the discrete nonlinear Schrödinger chain
J. Stat. Mech. (2013) P08017.

65. E. Ignesti, F. Tommasi, L. Fini, S. Lepri, V. Radhalakshmi, D.S. Wiersma, S. Cavalieri
Experimental and theoretical investigation of statistical regimes in random laser emission
Phys. Rev. A 88, 033820 (2013)
Physical Review Highligthed article
66. S. Borlenghi, S. Lepri, L. Bergqvist, A. Delin
Thermo-magnonic diode: rectification of energy and magnetization currents
Phys. Rev. B 89, 054428 (2014).
67. S. Iubini, S. Lepri, R. Livi, A. Politi
Boundary-Induced Instabilities in Coupled Oscillators
Phys. Rev. Lett. 112, 134101 (2014).
68. P. Bernabó, R. Burioni, S. Lepri, A. Vezzani
Anomalous transmission and drifts in one-dimensional Lévy structures
Chaos, Solitons and Fractals 67, 11 (2014).
69. J. D'Ambroise, P. G. Kevrekidis, B.A. Malomed, S. Lepri
PT-symmetric ladders with a scattering core
Phys. Lett. A 378, 38 2824-2830 (2014).
70. S. Lepri, A. Pikovsky
Nonreciprocal wave scattering on nonlinear string-coupled oscillators
Chaos 24, 043119 (2014).
71. S.S. Zakeri, S. Lepri, D.S. Wiersma
Localization in one-dimensional chains with Lévy-type disorder
Phys. Rev. E 91, 032112 (2015)
72. S. Borlenghi, S. Iubini, S. Lepri, L. Bergqvist, A. Delin, and J. Fransson
Coherent energy transport in classical nonlinear oscillators: An analogy with the Josephson effect
Phys. Rev. E 91, 040102(R) (2015)
73. P. Di Cintio, R. Livi, H. Bufferand, G. Ciraolo, S. Lepri, and M. J. Straka
Anomalous dynamical scaling in anharmonic chains and plasma models with multiparticle collisions
Phys. Rev. E 92, 062108 (2015)
74. S. Iubini, S. Lepri, R. Livi, A. Politi
Coupled transport in rotor models
New J. Phys. 18 (2016) 083023
75. F. Tommasi, E. Ignesti, S. Lepri, S. Cavalieri
Robustness of replica symmetry breaking phenomenology in random laser
Scientific Reports, 6, 37113 (2016)
76. P. Di Cintio, R. Livi, G. Ciraolo, S. Lepri
Multiparticle collision simulations of two-dimensional one-component plasmas: Anomalous transport and dimensional crossovers
Phys. Rev. E 95, 043203 (2017)
77. S. Lepri, C. Trono, G. Giacomelli
Complex active optical networks as a new laser concept
Phys. Rev. Lett. 118, 123901 (2017)
78. S. Borlenghi, S. Iubini, S. Lepri, J. Fransson
Entropy production for complex Langevin equations
Phys. Rev. E 96 (1), 012150 (2017)
79. S. Iubini, S. Lepri, R. Livi, G.-L. Oppo, A. Politi
A Chain, a Bath, a Sink, and a Wall
Entropy 19, no. 9: 445 (2017) (invited paper)

Book chapters

1. S. Lepri, R. Livi, A. Politi
Anomalous heat conduction
Invited chapter for the book Anomalous Transport: Foundations and Applications Wiley, VCH (Berlin),

2008.

2. D. S. Wiersma, S. Mujumdar, S. Cavalieri, S. R. Torre, G. L. Oppo, and S. Lepri,
   Chaotic Behavor of Random Lasers
   Chapter 10 in *Tutorials in Complex Photonic Media*, M. Noginov, M. W. McCall, G. Dewar, and N. I. Zheludev, Eds., SPIE Press, Bellingham, WA, 277-299 (2009).
3. S. Lepri, G. Casati
   Nonreciprocal wave propagation through open, discrete nonlinear Schroedinger dimers
   in *Localized Excitations in Nonlinear Complex Systems: Current State of the Art and Future Perspectives* Kevrekidis, P.; Carretero-Gonzalez, R.; Cuevas-Maraver, J.; Frantzeskakis, D.; Karachalios, N.; Palmero-Acebedo, F. (Eds.) Springer Series: Nonlinear Systems and Complexity, Vol. 7 (2014)
4. S. Lepri, R. Livi, A. Politi
   Heat Transport in Low Dimensions: Introduction and Phenomenology in *Thermal Transport in Low Dimensions: From Statistical Physics to Nanoscale Heat Transfer*, S. Lepri (Ed.) Springer Lecture Notes in Physics, Vol. 921 (2016)

Conference proceedings

1. S. Lepri, A. Politi , A. Torcini
   Lyapunov exponents from node-counting arguments
   Journal de Physique IV, vol 8 Pr6 p.263 (1998).
2. S. Lepri, R. Livi, A. Politi
   Stationary energy transport in nonlinear lattices
   in L. Vazquez, R. S. MacKay, M. P. Zorzano (ed.) *Proceedings of the third conference on Localization and energy transfer in nonlinear systems,* World Scientific, Singapore (2003).
3. F. Piazza, S. Lepri, R. Livi
   Localization as an activated process in 2D non–linear lattices
   in L. Vazquez, R. S. MacKay, M. P. Zorzano (ed.) *Proceedings of the third conference on Localization and energy transfer in nonlinear systems,* World Scientific, Singapore (2003).
4. S. Barbay, S. Lepri, G. Giacomelli
   Study of stochastic synchronization in vertical-cavity lasers
   Proc. SPIE Vol. 5471, p. 233-243, *Noise in Complex Systems and Stochastic Dynamics II*; Zoltan Gingl Ed. (2004)
5. H. Bufferand, G. Ciraolo, Ph. Ghendrih, P. Tamain, F. Bagnoli, S. Lepri, R. Livi
   One-dimensional particle models for heat transfer analysis
   J. Phys.: Conf. Ser. 260 012005 (2010).
6. Tommasi, F. Ignesti, E. Fini, L. Lepri, S. Azzali, N. ,Cavalieri, S.
   Dynamics of random laser emission: Investigation and practical perspectives
   Proceeding of Fotonica AEIT, Italian Conference on Photonics Technologies, 2015
7. Lebowitz, J., Livi, R., Majumdar, S., Mukamel, D., Ruffo, S., Casetti, L., Lepri, S.
   Advances in Non-equilibrium Statistical Mechanics: large deviations and long-range correlations, extreme value statistics, anomalous transport and long-range interactions.
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