

CURRICULUM VITÆ di Massimo Cencini

Dati Personali

Nome e Cognome	Massimo Cencini
Data e Luogo di Nascita	6 Maggio 1971, Roma
Indirizzo professionale	CNR-ISC, Istituto dei Sistemi Complessi, Via dei Taurini 19, 00185, Roma
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URL	http://denali.phys.uniroma1.it/cencini
ResearcherID	http://www.researcherid.com/rid/C-1191-2008
Google scholar	http://scholar.google.it/citations?user=cFpeKc0AAAAJ&hl=en

Esperienze professionali

14/04/2008	Ricercatore CNR
15/06/2004 – 13/04/2008	Ricercatore INFN (<i>Tenure Track</i>) al Centro Ricerca e Sviluppo INFN-SMC “Statistical Mechanics and Complexity”
01/03/2003 – 14/06/2004	Ricercatore INFN a tempo determinato al Centro Ricerca e Sviluppo INFN-SMC “Statistical Mechanics and Complexity”
01/02/2002 – 28/02/2003	Post-doc sui fondi del network europeo “Non Ideal Turbulence”, Laboratorio Cassini CNRS, Nizza (Francia).
12/2001	Contratto di collaborazione, Dipartimento di Fisica dell’Università di Roma “Tor Vergata”.
1/12/2000 – 20/11/2001	Contratto di collaborazione coordinata e continuativa per svolgere attività di ricerca, Dipartimento di Fisica dell’Università degli studi di Roma “La Sapienza”.
29/11/1999 – 28/11/2000	Scienziato ospite, Max-Planck-Institut für Physik komplexer Systeme, Dresda (Germania).

Studi ed esami sostenuti

09/02/2000	Discussione tesi di dottorato: <i>Characterization of complex behaviors in dynamical systems: beyond the Lyapunov exponent</i>
1996 – 1999	Dottorato di ricerca (XII Ciclo) in Fisica Università degli studi di Roma “La Sapienza”.
31/05/1996	Laurea in Fisica con esito: 110/110 <i>E Lode</i> , Università degli studi di Roma “La Sapienza”. Titolo Tesi: <i>Leggi di scala anomale in un modello di turbolenza sviluppata</i> .
1990 – 1996	Corso di Laurea in Fisica, Università degli studi di Roma “La Sapienza”.

Riconoscimenti

2014 e 2015	Distinguished referee: The European Physical Journal (EPJ)
2011	Outstanding Referee dell’American Physical Society

Pubblicazioni

99

1 libro come autore (460pg), 1 libro come editore, 68 pubblicate o in corso di pubblicazione su riviste internazionali con peer review (di cui 1 Phys.

Reports, **1** Nature Comm., **10** Phys. Rev. Lett.), **5** capitoli di libri, **17** atti di convegni, **4** altre pubblicazioni, **1** articolo divulgativo, **1** tesi di dottorato, **1** tesi di laurea.

h-index **23** (ISI-WOS), **27** (Google Scholar) [al 11 Luglio 2016]
totale citazioni **1750** (ISI-WOS), **2641** (Google Scholar) [al 11 Luglio 2016]
5 più citate 168, 145, 136, 120, 74 (ISI-WOS), 271, 198, 191, 162, 119 (Google Scholar)

Abilitazioni Scientifiche (ASN)

Professore II Fascia SSD: 02/A2 (validità 08/01/2014 → 08/01/2020)
SSD: 02/B2 (validità 11/12/2013 → 11/12/2019)

Attività di Peer Review

Riviste internazionali Physical Review Letters, Physical Review X, Physical Review E, Europhysics Letters, Physics of Fluids, Journal of Fluid Mechanics, Journal of Physics A, Physica Scripta, JSTAT, Physica D, Physica A, The European Physical Journal B, Nonlinear Processes in Geophysics, Journal of Theoretical Biology, Ecological Modeling.

Progetti ANR- Agence Nationale de la Recherche (Francia);
DFG- Deutsche Forschungsgemeinschaft (German Research Foundation)

Attività editoriale

2011-2013 Membro dell'editorial board di *Scientific Reports* (Nature Publishing Group)
2013 Guest editor (con F. Ginelli) dello special issue "Lyapunov analysis: from dynamical systems theory to applications" Journal of Physics A: Mathematical and Theoretical, Volume **46** Numero 25 del 28 Giugno 2013 (24 articoli).
2014 Co-Editore (con F. Cecconi, A. Puglisi, D. Vergni e A. Vulpiani) del volume "Large deviations in physics: The legacy of the law of large numbers three centuries after" per la collana Lecture Notes in Physics, Vol. 885 Springer Publishing Company
2015-2016 Guest editor (con L. Biferale, A.S. Lanotte e M. Sbragaglia) del Topical issue "Multi-scale phenomena in complex flows and flowing matter" su EPJE

Progetti di ricerca italiani ed europei

2014- **Leader del Working Group** *Numerical Techniques: Complex flows* e Member of Managing Committee Substitute COST Action MP1305 *Flowing Matter*
2011-2013 **Responsabile** di unità di ricerca del progetto PRIN2009 *Fluttuazioni: dai sistemi macroscopici alle nanoscale* finanziato da MIUR (N. 2009PYYZM5)
2009-2013 Partecipante alla COST Action MP0806 *Particles in Turbulence*
2008-2011 Partecipante alla Ricerca Spontanea a Tema libero (RSTL) *Dinamiche cooperative in strutture quasi unidimensionali* finanziata da CNR.
2007 **Responsabile** del progetto di supercalcolo 2007 *Particles and Droplets in Geophysical Flows*, Centro di Calcolo CINECA di Bologna (Assegnate 25000 ore CPU)
2006 **Responsabile** del progetto di supercalcolo 2006 *Turbulence in complex flows*, Centro di Calcolo CINECA di Bologna (Assegnate 20000 ore CPU)

2006	Partecipante al progetto <i>Trasporto e dispersione di impurità sospese in un fluido turbolento</i> , Programma Galileo 2006 Azione integrata Italo-Francese
2006	Partecipante al progetto <i>HEAVY - Heavy Particles in Turbulent Flows</i> , Progetto Europeo FP6 "DEISA 2005 : Extreme Computing Initiative (DECI)" CPU-time 400000 ore presso CINECA
2006-2008	Partecipante al Prin2005 <i>Meccanica statistica dei sistemi complessi</i> finanziato dal MIUR (N. 2005027808)
2003-2005	Partecipante al Prin2003 <i>Sistemi complessi e sistemi a molti corpi</i> finanziato dal MIUR (N.2003020230)
2004-2006	Partecipante al Network europeo <i>Fluid Mechanical Stirring and Mixing: the Lagrangian Approach</i> (HPRN-CT-2002-00300)
2002-2003	Partecipante al Network europeo <i>Non-ideal Turbulence</i> (HPRN-CT-2000-00162)
2001-2003	Partecipante al Prin2001 <i>Fisica Statistica di Sistemi Complessi Classici e Quantistici</i> finanziato dal MIUR (N.2001023848)
1999-2001	Partecipante al Prin1999 <i>Fisica Statistica e Teoria della Materia Condensata</i> finanziato dal MIUR (N.9902263788)

Interessi scientifici principali

Parole chiave	Sistemi dinamici e complessità nei sistemi caotici, sincronizzazione caotica, turbolenza bi- e tri-dimensionale, trasporto di particelle e campi reagenti ed inerti, trasporto di particelle self-propelled, dinamica delle popolazioni
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Soggiorni e visite presso università e istituti esteri

05/2016	Department of Physics, Harvard University, Cambridge (USA)
10/2013	ICTS-EDAS Indian Institute of Science, Bangalore (India)
07/2012	<i>Scienziato invitato</i> Osservatorio della costa Azzurra, Nizza (Francia) [1 mese]
03/2012	KITCP Kavli Institute Beijing (Cina)
12/2010	Università di Granada (Spagna)
02/2009	Istituto Niels Bohr, Copenagen (Danimarca)
02/2008	Institute Pasteur, Parigi (Francia)
05/2008	Lorentz Center, Leida (Olanda)
01/2007	Weizman Institute, Rehovot (Israele)
08/2006	Lorentz Center, Leida (Olanda)
07/2006	Dipartimento di matematica Università di Warwick (Inghilterra)
10/2005	Dipartimento di matematica Università di Helsinki (Finlandia)
07/2005	Osservatorio della costa Azzurra, Nizza (Francia)
09/2002	Centro Internacional de Ciencias, UNAM Cuernavaca (Mexico)
07/2002	The Erwin Schrödinger International Institute for Mathematical Physics, Vienna (Austria)
07/2001	INLN, CNRS Valbonne (Francia)

Attività didattica

AA 1998/9	30 ore corso di "Fisica II", Dipartimento di Fisica dell'Università degli studi di Roma "La Sapienza"
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AA 2004/5	Supervisione della tesi di Laurea di <i>Mauro Chinappi</i> , Facoltà di Ingegneria Roma "La Sapienza".
2004	Corso su "Active vs Passive scalar turbulence" per la <i>Scuola Nazionale di Fisica della Materia</i> Settembre 2004, Fondazione ISI, Villa Gualino (Torino).
2005	Tutore del programma trimestrale di stage di <i>Bruno Deremble</i> studente della Scuola Normale Superiore di Lione (Francia).
08/2007	Corso su "Active vs Passive scalar turbulence" per la scuola estiva <i>Small-scale turbulence: Theory, Phenomenology and Applications</i> Agosto 2007, Institut d'Etudes Scientifiques de Cargèse (Francia).
2009	Supervisione della tesi di Laurea di <i>Sandro Iannaccone</i> studente del Dipartimento di Fisica dell'Università "La Sapienza".
AA 2008/2009	Corso di dottorato su "Trasporto di particelle traccianti ed inerziali in flussi laminari e turbolenti", Facoltà di Ingegneria, Dipartimento di Meccanica e Aeronautica, Roma "Sapienza" (20 ore)
09/2010	Corso su "Dynamics of inertial particles and dynamical systems" per la scuola internazionale su "Fluctuations and Turbulence in the Microphysics and Dynamics of Clouds", Porquerolles (Francia) 2010 (3 ore)
AA 2014/15	Supervisione della tesi di Laurea di <i>Stefano Bianchi</i> , studente del Dipartimento di Fisica dell'Università "La Sapienza".

Organizzazione di Incontri scientifici, conferenze, workshop

03/2016	Co-organizzatore del Workshop internazionale "Lagrangian transport: from complex flows to complex fluids" Università del Salento, Lecce, Italia
02/2016	Co-organizzatore del Workshop internazionale "Microorganisms in turbulent flows" Lorentz Center, Leida, Olanda
07/2015	Co-organizzatore della scuola internazionale "Non standard transport: From anomalous diffusion to reaction spreading in heterogeneous systems" Gran Sasso Science Institute, L'Aquila, Italia
03/2015	Co-organizzatore Workshop internazionale "Flowing Matter Across the Scales" Istituto Nazionale di Studi Romani, Roma
09/2014	Co-organizzatore Conferenza internazionale "Strolling on Chaos, Turbulence and Statistical Mechanics" Dipartimento di Fisica, Università "Sapienza" Roma
05/2014	Co-organizzatore Workshop internazionale "Active Fluids: new challenges from experiments to high-performance computing" Mariehamn, Åland (Finlandia)
09/2013	Co-organizzatore Conferenza internazionale "Large deviations and rare events in physics and biology", 6th Giovanni Paladin Memorial, Dipartimento di Fisica, Università "Sapienza" Roma
09/2012	Membro del comitato locale della nona edizione della "European Fluid Mechanics Conference" [circa 650 partecipanti da 44 paesi]
05/2008	Co-organizzatore Workshop "Network Synchronization: from dynamical systems to neuroscience" Lorentz Center (Leida, Olanda) 19-30 Maggio 2008. Center di Leida)
04/2007	Convener della sessione "Turbulence and dispersion in particle-laden geophysical flows: theory and models" EGU (European Geosciences Union) General Assembly, Vienna (Austria)
06/2003	Co-organizzatore Workshop <i>Lagrangian problems in turbulence</i> presso il Centro Ricerca e Sviluppo INFM per la Meccanica Statistica e Complessità, cui

hanno preso parte circa 30 persone (tra italiani e stranieri) (Finanziato da INFN-CNR, SMC)

Incontri a carattere divulgativo

- 12/2012 Organizzazione del convegno "Si può prevedere il futuro? Ruolo e limiti della scienza", presso il complesso museale MAXXI B.A.S.E.
- 2007-2009 Organizzazione di Caffè Scientifici in collaborazione con l'associazione culturale *FormaScienza*

Seminari

- Gyrotactic Phytoplankton in turbulent flows (su invito)* Third International Workshop "Nonlinear processes in oceanic and atmospheric flows"
ICMAT, Campus Cantoblanco UAM, Madrid, Spain (2016)
- Turbulent unmixing of phytoplankton (su invito)* Widely Applied Math (WAM) Seminar Harvard University, John A. Paulson School of Engineering and Applied Sciences Quantitative biology seminar
Cambridge, USA (2016).
- Gyrotactic Phytoplankton Swimming in a Flow (su invito)* Quantitative biology seminar
Trieste, Italia (2014).
- Microorganisms swimming in a flow (su invito)* XIX National conference on statistical physics and complex systems
Parma, Italia (2014).
- Nonlinear superposition of direct and inverse cascades in 2d-turbulence (su invito)*
Seminario al "Rencontres Niçoises de Mécanique des Fluides", Université de Nice Sophia Antipolis, Nizza, Francia (2013).
- Microorganisms swimming in turbulence (su invito)*
Conferenza per gli 80 anni di Tito Fortunato Arecchi, "Il Futuro è quantum", Istituto Galileo Galilei, Firenze (2013).
- Clustering of swimming microorganisms in turbulent flows (su invito)*
ICTS-EDAS Discussion meeting on "Transport of Particles in Turbulent Flows: Experimental, Computational and Theoretical Investigations", Indian Institute of Science, Bangalore, India (2013).
- Gyrotactic clustering from turbulent acceleration*
European Turbulence Conference 14, ENS-Lione (Francia) 2013.
- Nonlinear Superposition of Direct and Inverse Cascades in Two-Dimensional Turbulence Forced at Large and Small Scales*
European Fluid Mechanics Conference 9, Roma (Italia) 2012
- Gyrotactic clustering in turbulent flows workshop "Particles in Turbulence",*
the Lorentz Center, Leiden (Olanda) 2012;
- Nonlinear Superposition of Direct and Inverse Cascades in Two-Dimensional Turbulence Forced at Large and Small Scales (su invito)*
Program "New directions in turbulence" Kavli Institute for Theoretical Physics China at the Chinese Academy of Sciences, Beijing (Cina) 2012
- Caustics and intermittency in turbulent suspensions of heavy particles (su invito)*
Mini-Symposium "Singularities in turbulent flows"
Conference "Dynamics Days Europe 2011", Oldenburg (Germania) 2011
- Species-area relationships in spatially explicit neutral model*
Workshop "Niche theory and speciation", Keszthely (Ungheria) 2011

- Intermittency in the velocity distribution of heavy particles in turbulence*
Conference "Particles in turbulence 2011", University of Potsdam, Potsdam (Germania) 2011
- Transport of tracers and particles in fluid flows (su invito)*
International Conference and School on "Anomalous Transport: from Billiards to Nanosystems", Sperlonga (Italia) 2010
- Dynamics of inertial particles and dynamical systems (su invito)*
International School on "Fluctuations and Turbulence in the Microphysics and Dynamics of Clouds" Porquerolles (Francia) 2010
- Heavy particles in turbulent flows, (su invito)*
International Workshop ORFLOW'10 "Living Organisms in Flows: From Small-scale Turbulence to Geophysical Flows", IFISC, Palma de Mallorca (Spagna) 2010
- Caso, Caos e Predicibilità, (su invito)*
Seminario divulgativo nell'ambito degli Incontri al Chiostro 2009/2010, Facoltà di Ingegneria Università "Sapienza" Roma (Italia) 2010
- Relative velocity statistics of inertial particles,*
Workshop nell'ambito della COST ACTION MP-0806 "Particles in Turbulence" Nizza, (Francia) 2009.
- A brief review on the finite-size Lyapunov exponent, (su invito)*
Workshop Lyapunov analysis, from theory to geophysical applications, Institute of Complex Systems, Paris (Francia) 2009
- Transport in chaotic and non-chaotic systems, (su invito)*
Workshop on "Pseudochaos and Stable-Chaos in Statistical Mechanics and Quantum Physics" ICTP, Trieste (Italia) 2009.
- Species-area relationships and the multi-type voter model,*
BioComplexity Wednesday Meetings and Special Lectures Niels Bohr International Academy, Copenhagen (Danimarca) 2009.
- Dynamics and statistics of polydisperse suspensions of inertial particles, (su invito)*
Workshop on "Dynamics of inertial particles: from ocean and atmosphere to planets", Max-Planck institute for physics of complex systems, Dresda (Germania) 2008.
- Active versus Passive scalar turbulence, (su invito)*
minicorso alla scuola di fisica "Small-scale turbulence : Theory, Phenomenology and Applications", Institut d'Etudes Scientifiques de Cargèse, (Francia) 2007.
- Clusters and Voids of Inertial Particles Transported by Turbulence, (su invito)*
ICIAM07 "6th International Congress on Industrial and Applied Mathematics", Zurigo (Svizzera) 2007.
- Inertial particles in turbulence: review of dns and open issues, (su invito)*
workshop "Stochastic models for turbulent suspensions of inertial particles", Observatoire de la Côte D'Azur, Nizza (Francia) 2006.
- Clustering of inertial particles,*
workshop "Stirring and Mixing in Turbulence: the Lagrangian Approach", Lorentz Center, Leida (Olanda) 2006.
- Clustering of inertial particles in turbulent flows,*
workshop "Non-equilibrium statistical mechanics and turbulence", Warwick University, Warwick (UK) 2006.
- Acceleration statistics of heavy particles in turbulent flows, (su invito)*
European Geophysical Union (EGU06) General Assembly, Vienna (Austria) 2006.
- Inertial Particles in High-Reynolds turbulent flows, (su invito)*
ESF workshop "Challenging Turbulent Lagrangian Dynamics", Castel Gandolfo (Roma) 2005.

- Nonlinearly driven synchronization in chaotic systems*,
"X Convegno Nazionale di Meccanica Statistica". Università di Parma 2005.
- Clustering and collision in suspensions of heavy particles*, (**su invito**)
workshop "Physics and Modeling of climate dynamics", Potsdam Institute for Climate Impact Research, Postdam (Germania), 2005.
- Active versus Passive scalar turbulence*
X European Turbulence Conference (ETC10), Trondheim (Norvegia) 2004.
- Active scalar transport: Is there universality in turbulent fields?*, (**su invito**)
conferenza "Statistical Mechanics, Chaos and Condensed Matter Theory", Università di Roma "La Sapienza", 2004.
- Trasporto turbolento: paradigmi e problemi aperti*, (**su invito**)
Convegno di Fisica di Fai della Paganella, 2004.
- On the Lagrangian meaning of dissipative anomaly in scalar turbulence*, (**su invito**)
conferenza "Statistical Mechanics and non perturbative Field Theory", Università di Bari, 2004.
- Active versus Passive scalar turbulence* (**su invito**),
minicorso alla "Scuola Nazionale di Fisica della Materia INFN", Institute for Scientific Interchanges (ISI), Torino (Italy) 2004.
- Kolmogorov e la complessità*,
Dipartimento di fisica Università di Roma "La Sapienza", 2003.
- Active vs Passive scalar turbulence*,
297th WEH Seminar "Non-ideal turbulence" Physik-Zentrum, Bad Honnef (Germania) 2003.
- Active vs Passive scalar turbulence*, (**su invito**)
workshop "Topics in nonlinear dynamics" Cic, Cuernavaca (Messico) 2002.
- Non Asymptotic Properties of Transport and Mixing*,
conferenza "Dynamics of Complex Systems", University of Alaska, Fairbanks (Stati Uniti) 2001.
- The Intermediate dissipative range of turbulence detected through the exit times statistics*,
workshop "Intermittency in Turbulence". Fondazione-ISI, Torino 2000.
- The Finite Size Lyapunov Exponent: Scale-Dependent Description Dynamical Systems*,
Università di Postdam, (Germania) 2000.
- Exit-times of turbulent signals*
VIII conferenza Europea di Turbolenza (ETC8), Barcellona (Spagna), 2000.
- Non-Linear versus Linear disturbance propagation in spatially distributed systems*,
Max-Planck-Institut für Physik komplexer Systeme, Dresden (Germania) 2000.
- Introduzione alla Turbolenza*, (**su invito**).
Centro Interdisciplinare per lo Studio dei Sistemi Complessi (CISSC), Domus Galileiana, Pisa 1999.
- Macroscopic chaos in globally coupled maps*
Max-Planck-Institut für Physik komplexer Systeme, Dresden (Germania) 1998.
- Moti collettivi in sistemi caotici estesi*, (**su invito**)
III Convegno Nazionale di Meccanica Statistica. Università di Parma 1998.
- Transport and Dispersion in closed basins: beyond the diffusion coefficient*,
workshop "Transport in Atmosphere and Oceans", Stoccolma (Svezia) 1997.

Publicazioni

Libri (autore)

- [1] M. Cencini, F. Cecconi & A. Vulpiani, "*Chaos: From Simple Models to Complex Systems*", 480pgg. Collana: Series on Advances in Statistical Mechanics, Settembre 2009 (World Scientific Publishing Company, Singapore). ISBN: 978-981-4277-65-5 (Print) ISBN: 978-981-4467-49-0 (ebook)

Libri (editore)

- [2] "*Large Deviations in Physics: The Legacy of the Law of Large Numbers*", Editori: F. Cecconi, M. Cencini, A. Puglisi, D. Vergni, A. Vulpiani. 314pgg. Collana: Lecture Notes in Physics, Vol. 885, (Springer Heidelberg New York Dordrecht London). ISBN: 978-3-642-54250-3 (Print) 978-3-642-54251-0 (Online)

Riviste internazionali con referee

- [3] L. Biferale, M. Cencini, D. Pierotti & A. Vulpiani, "*Intermittency in Stochastically Perturbed Turbulent Models*", Journal of Statistical Physics **88**, 1117 (1997).
- [4] V. Artale, G. Boffetta, A. Celani, M. Cencini & A. Vulpiani, "*Dispersion of passive tracers in closed basins: Beyond the diffusion coefficient*", Physics of Fluids **9**, 3162 (1997).
- [5] M. Cencini, M. Falcioni, D. Vergni & A. Vulpiani, "*Macroscopic chaos in globally coupled maps*", Physica D **130**, 58 (1999).
- [6] M. Cencini, G. Lacorata, A. Vulpiani & E. Zambianchi, "*Mixing in a Meandering Jet: a Markovian Approximation*", Journal of Physical Oceanography **29**, 2578 (1999).
- [7] P. Castiglione, M. Cencini, A. Vulpiani & E. Zambianchi, "*Transport in finite size systems: an exit time approach*", Chaos **9**, 871 (1999).
- [8] L. Biferale, M. Cencini, D. Vergni & A. Vulpiani, "*Exit time of turbulent signals: a way to detect the intermediate dissipative range*", Physical Review E: Rapid Communications **60**, 6295 (1999).
- [9] G. Boffetta, M. Cencini, S. Espa & G. Querzoli, "*Experimental evidence of chaotic advection in a convective flow*", Europhysics Letters **48**, 629 (1999).
- [10] G. Boffetta, A. Celani, M. Cencini, G. Lacorata & A. Vulpiani, "*The predictability in systems with an uncertainty in the evolution equation*", Journal of Physics A **33**, 1313 (2000).
- [11] G. Boffetta, A. Celani, M. Cencini, G. Lacorata & A. Vulpiani, "*Non Asymptotic Properties of Transport and Mixing*", Chaos **10**, 50 (2000).
- [12] M. Abel, L. Biferale, M. Cencini, M. Falcioni, D. Vergni & A. Vulpiani, "*An exit time approach to (ϵ, τ) -entropy*", Physical Review Letters **84**, 6002 (2000).
- [13] M. Cencini, M. Falcioni, E. Olbrich, H. Kantz & A. Vulpiani, "*Chaos or Noise — Difficulties of a distinction*", Physical Review E **62**, 427 (2000).
- [14] M. Abel, L. Biferale, M. Cencini, M. Falcioni, D. Vergni & A. Vulpiani, "*Exit-Times and ϵ -Entropy for Dynamical Systems, Stochastic Processes, and Turbulence*", Physica D **147**, 12 (2000).
- [15] A. Vulpiani, L. Biferale, G. Boffetta, A. Celani, M. Cencini & D. Vergni, "*On the exit-time approach for ϵ -entropy and turbulent signals*", Physica A **280**, 49 (2000).
- [16] G. Boffetta, M. Cencini, S. Espa & G. Querzoli, "*Chaotic advection and relative dispersion in a convective flow*", Physics of Fluids **12**, 3160 (2000).
- [17] M. Cencini & A. Torcini, "*Linear and nonlinear information flow in spatially extended systems*", Physical Review E **63**, 056201 (2001).
- [18] L. Biferale, M. Cencini, A. Lanotte, D. Vergni & A. Vulpiani, "*Inverse statistics of smooth signals: the case of two dimensional turbulence*", Physical Review Letters **87**, 124501 (2001).
- [19] G. Boffetta, M. Cencini, M. Falcioni & A. Vulpiani, "*Predictability: a way to characterize complexity*", Physics Reports **356**, 367 (2002).
- [20] M. Abel, M. Cencini, D. Vergni & A. Vulpiani, "*Front speed enhancement in cellular flows*", Chaos **12**, 481 (2002).
- [21] G. Boffetta, M. Cencini & J. Davoudi, "*Closure of two dimensional turbulence: the role of pressure gradients*", Physical Review E **66**, 017301 (2002).

- [22] A. Celani, M. Cencini, A. Mazzino & M. Vergassola, “Active vs passive scalar turbulence”, *Physical Review Letters* **89**, 234502 (2002).
- [23] M. Cencini, A. Torcini, D. Vergni & A. Vulpiani, “Thin front propagation in steady and unsteady flows”, *Physics of Fluids* **15**, 679 (2003).
- [24] L. Biferale, M. Cencini, A. Lanotte & D. Vergni, “Inverse velocity statistics in two dimensional turbulence”, *Physics of Fluids* **15**, 1012 (2003).
- [25] L. Biferale, M. Cencini, A. Lanotte, M. Sbragaglia & F. Toschi, “Anomalous scaling and universality in hydrodynamic systems with power-law forcing”, *New Journal of Physics* **6**, 37 (2004).
- [26] A. Celani, M. Cencini & A. Noullez, “Going forth and back in time: a fast and parsimonious algorithm for mixed initial/final-value problems”, *Physica D* **195**, 283 (2004).
- [27] A. Celani, M. Cencini, A. Mazzino & M. Vergassola, “Active and passive fields face to face”, *New Journal of Physics* **6**, 72 (2004).
- [28] A. Celani, M. Cencini, M. Vergassola, D. Vincenzi & E. Villermaux “Shear effects in passive scalars spectra”, *Journal of Fluid Mechanics* **523**, 99 (2005).
- [29] F. Cecconi, M. Cencini, M. Falcioni & A. Vulpiani, “Brownian motion and diffusion: from stochastic processes to chaos and beyond”, *Chaos* **15**, 026102 (2005).
- [30] J. Bec, A. Celani, M. Cencini & S. Musacchio, “Clustering and collisions of heavy particles in random smooth flows”, *Physics of Fluids* **17**, 073301 (2005).
- [31] M. Cencini & A. Torcini, “Nonlinearly driven transverse synchronization in coupled chaotic systems”, *Physica D* **208**, 191 (2005).
- [32] S. Berti, G. Boffetta, M. Cencini & A. Vulpiani, “Turbulence and coarsening in active and passive binary mixtures”, *Physical Review Letters* **95**, 224501 (2005).
- [33] M. Chinappi, M. Cencini & A. Vulpiani, “Thin front propagation in random shear flows”, *Physical Review E* **73**, 016308 (2006).
- [34] J. Bec, L. Biferale, G. Boffetta, A. Celani, M. Cencini, A. Lanotte, S. Musacchio & F. Toschi, “Acceleration statistics of heavy particles in turbulence”, *Journal of Fluid Mechanics* **550**, 349 (2006).
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