

Daniele Coslovich – Curriculum Vitae

Address

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Current position

Associate Professor 2020–
Dipartimento di Fisica, Università di Trieste (Italy)

Academic track

Abilitazione scientifica nazionale, professore di seconda fascia settore 02/B2 2018/08
MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca), Italy

Habilitation à diriger des recherches (HDR) 2017/02
“*Models and computer simulations of glass- and cluster-forming systems*”
University of Montpellier, France

Maitre de conférences (Associate Professor) 2011–2020
Laboratoire Charles Coulomb, University of Montpellier, Montpellier (France)

Maitre de conférences (Associate Professor) 2010–2011
Laboratoire de Colloïdes, Verres et Nanomatériaux, University of Montpellier 2, Montpellier (France)

Post-doc 2008–2010
“*Glass formation of colloids confined in porous materials*”
Soft Matter Theory group, Technische Universität Wien, Austria
Group leader: Gerhard Kahl

Ph.D. in Physics 2005–2008
“*Connections between structure, dynamics, and energy landscape in simple models of glass-forming liquids*”
University of Trieste, Italy
Supervisor: Giorgio Pastore

Fellowship CNR-INFM 2004/09–2004/12
“*Large-scale atomistic simulations*”
Centro di simulazione CNR-INFM “Democritos”, Trieste, Italy

Laurea in Physics 1999–2004
“*Superfici d'energia, ergodicità e dinamica come indicatori della transizione liquido-vetro*”
University of Trieste, Italy
Supervisor: Giorgio Pastore
Grade: 110/110 cum laude

Research

My research interests concern the physics of **disordered states of matter**, with particular focus on the microscopic mechanisms of **glass formation** and on glass structure. I am also interested in modeling the phase behavior, structure and dynamics of **soft condensed matter**. My work is based on the methods of **statistical physics**, **liquid state theory** and on **computer simulations**. Over the years I developed a computational approach based on **reproducible research** methods, **high-performance computing** and on high-level **simulation frameworks**, such as the [atooms](#) Python package, which I develop.

Fellowships

- JSPS Invitational Fellowship for Research in Japan (Short Term) 2019/02
Visited institutions: University of Tokyo and University of Nagoya
Collaborators: Dr. Atsushi Ikeda, Dr. Takeshi Kawasaki, Prof. Kunimasa Miyazaki

Awards

- IOP Outstanding Reviewer Award 2022 2022
- IOP Trusted Reviewer Status (route 3) 2022
- Prime d'encadrement doctoral et de recherche (PEDR) 2018
<https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000020833322>
- Top reviewer award for the Journal of Chemical Physics 2012
- ICTP Award, International Center for Theoretical Physics (ICTP) 2004
- Luciano Fonda scholarship for undergraduate students in Physics 2000–2003
Corso di Laurea in Fisica, University of Trieste

Research projects

- Participant in ERC project 2012–2017
“*Statistical physics of dense particle systems in the absence of thermal fluctuations*”
Principal investigator: Ludovic Berthier
- Principal investigator in PRACE project 2014/03–2015/03
“*Amorphous order in glassy silica*”
Resources: 150.000h GPU
- Principal investigator in PRACE project 2013/07–2014/01
“*Multi-GPU parallel tempering simulations*”
Resources: 100.000h GPU

Nota: PRACE is a European network that provides access to high performance computing (HPC) resources to researchers and scientists in academia and industry through peer-review. Allocated resources correspond to computing hours in European HPC centers.

Research articles

1. “**Dimensionality reduction of local structure in glassy binary mixtures**”
D. Coslovich, R. Jack, J. Paret, The Journal of Chemical Physics **157**, 204503 (2022) [\[doi\]](#)
2. “**Revisiting the single-saddle model for the β -relaxation of supercooled liquids**”
D. Coslovich, A. Ikeda, The Journal of Chemical Physics **156**, 094503 (2022) [\[doi\]](#)

3. **“partycls: A Python package for structural clustering”**
J. Paret, D. Coslovich, *Journal of Open Source Software* **6**, 3723 (2021) [\[doi\]](#)
4. **“Spatial structure of unstable normal modes in a glass-forming liquid”**
M. Shimada, D. Coslovich, H. Mizuno, A. Ikeda, *SciPost Physics* **10**, 001 (2021) [\[doi\]](#)
5. **“Assessing the structural heterogeneity of supercooled liquids through community inference”**
J. Paret, R. Jack, D. Coslovich, *The Journal of Chemical Physics* **152**, 144502 (2020) [\[doi\]](#) [\[dataset\]](#)
Selected as an Editor's pick
6. **“A localization transition underlies the mode-coupling crossover of glasses”**
D. Coslovich, A. Ninarello, L. Berthier, *SciPost Physics* **7**, 077 (2019) [\[doi\]](#) [\[dataset\]](#)
7. **“Dynamic and thermodynamic crossover scenarios in the Kob-Andersen mixture: Insights from multi-CPU and multi-GPU simulations”**
D. Coslovich, M. Ozawa, W. Kob, *The European Physical Journal E* **41**, 62 (2018) [\[doi\]](#) [\[dataset\]](#)
Invited contribution to the topical issue “Advances in Computational Methods for Soft Matter Systems”
8. **“Local order and crystallization of dense polydisperse hard spheres”**
D. Coslovich, M. Ozawa, L. Berthier, *Journal of Physics: Condensed Matter* **30**, 144004 (2018) [\[doi\]](#) [\[dataset\]](#)
9. **“Configurational entropy measurements in extremely supercooled liquids that break the glass ceiling”**
L. Berthier, P. Charbonneau, D. Coslovich, A. Ninarello, M. Ozawa, S. Yaida, *Proceedings of the National Academy of Sciences* **114**, 11356 (2017) [\[doi\]](#) [\[dataset\]](#)
10. **“Exploring the jamming transition over a wide range of critical densities”**
M. Ozawa, L. Berthier, D. Coslovich, *SciPost Physics* **3**, 027 (2017) [\[doi\]](#)
11. **“Models and Algorithms for the Next Generation of Glass Transition Studies”**
A. Ninarello, L. Berthier, D. Coslovich, *Physical Review X* **7**, 021039 (2017) [\[doi\]](#) [\[dataset\]](#)
Highly Cited Paper in the Web of Science database.
12. **“Two-dimensional systems with competing interactions: dynamic properties of single particles and of clusters”**
D. Schwanzler, D. Coslovich, G. Kahl, *Journal of Physics: Condensed Matter* **28**, 414015 (2016) [\[doi\]](#)
13. **“Structure of inactive states of a binary Lennard-Jones mixture”**
D. Coslovich, R. Jack, *Journal of Statistical Mechanics: Theory and Experiment* **2016**, 074012 (2016) [\[doi\]](#) [\[dataset\]](#)
14. **“Mean-field dynamic criticality and geometric transition in the Gaussian core model”**
D. Coslovich, A. Ikeda, K. Miyazaki, *Physical Review E* **93**, 042602 (2016) [\[doi\]](#)
15. **“Equilibrium Sampling of Hard Spheres up to the Jamming Density and Beyond”**
L. Berthier, D. Coslovich, A. Ninarello, M. Ozawa, *Physical Review Letters* **116**, 238002 (2016) [\[doi\]](#)
16. **“Structure and dynamics of coupled viscous liquids”**
A. Ninarello, L. Berthier, D. Coslovich, *Molecular Physics* **113**, 2707 (2015) [\[doi\]](#)
17. **“Diverging viscosity and soft granular rheology in non-Brownian suspensions”**
T. Kawasaki, D. Coslovich, A. Ikeda, L. Berthier, *Physical Review E* **91**, 012203 (2015) [\[doi\]](#)
18. **“Nonlinear dynamic response of glass-forming liquids to random pinning”**
W. Kob, D. Coslovich, *Physical Review E* **90**, 052305 (2014) [\[doi\]](#)
19. **“Correlation of Local Order with Particle Mobility in Supercooled Liquids Is Highly System Dependent”**
G. Hocky, D. Coslovich, A. Ikeda, D. Reichman, *Physical Review Letters* **113**, 157801 (2014) [\[doi\]](#)
20. **“Novel approach to numerical measurements of the configurational entropy in supercooled liquids”**
L. Berthier, D. Coslovich, *Proceedings of the National Academy of Sciences* **111**, 11668 (2014) [\[doi\]](#)

21. **"Static triplet correlations in glass-forming liquids: A molecular dynamics study"**
D. Coslovich, The Journal of Chemical Physics **138**, 12A539 (2013) [\[doi\]](#)
Invited contribution to the special issue "Glass transition"
22. **"Cluster and reentrant anomalies of nearly Gaussian core particles"**
D. Coslovich, A. Ikeda, Soft Matter **9**, 6786 (2013) [\[doi\]](#)
Invited contribution to the topical issue "2013 Emerging Investigators in Soft Matter"
23. **"Cluster glasses of ultrasoft particles"**
D. Coslovich, M. Bernabei, A. Moreno, The Journal of Chemical Physics **137**, 184904 (2012) [\[doi\]](#)
24. **"Finite-size effects in the dynamics of glass-forming liquids"**
L. Berthier, G. Biroli, D. Coslovich, W. Kob, C. Toninelli, Physical Review E **86**, 031502 (2012) [\[doi\]](#)
25. **"Dynamic arrest of colloids in porous environments: disentangling crowding and confinement"**
J. Kurzidim, D. Coslovich, G. Kahl, Journal of Physics: Condensed Matter **23**, 234122 (2011) [\[doi\]](#)
26. **"Effective interactions between oppositely charged polyelectrolytes in the presence of salt"**
J. Hansen, D. Coslovich, G. Kahl, Molecular Physics **109**, 2953 (2011) [\[doi\]](#)
27. **"Locally preferred structures and many-body static correlations in viscous liquids"**
D. Coslovich, Physical Review E **83**, 051505 (2011) [\[doi\]](#)
28. **"Hopping and microscopic dynamics of ultrasoft particles in cluster crystals"**
D. Coslovich, L. Strauss, G. Kahl, Soft Matter **7**, 2127 (2011) [\[doi\]](#)
29. **"Ultrasoft primitive model of polyionic solutions: Structure, aggregation, and dynamics"**
D. Coslovich, J. Hansen, G. Kahl, The Journal of Chemical Physics **134**, 244514 (2011) [\[doi\]](#)
30. **"Clustering, conductor-insulator transition and phase separation of an ultrasoft model of electrolytes"**
D. Coslovich, J. Hansen, G. Kahl, Soft Matter **7**, 1690 (2011) [\[doi\]](#)
31. **"Heterogeneous slow dynamics and the interaction potential of glass-forming liquids"**
D. Coslovich, C. Roland, Journal of Non-Crystalline Solids **357**, 397 (2011) [\[doi\]](#)
32. **"Correlation of nonexponentiality with dynamic heterogeneity from four-point dynamic susceptibility $\chi_4(t)$ and its approximation $\chi_T(t)$ "**
C. Roland, D. Fragiadakis, D. Coslovich, S. Capaccioli, K. Ngai, The Journal of Chemical Physics **133**, 124507 (2010) [\[doi\]](#)
33. **"Impact of random obstacles on the dynamics of a dense colloidal fluid"**
J. Kurzidim, D. Coslovich, G. Kahl, Physical Review E **82**, 041505 (2010) [\[doi\]](#)
34. **"Effects of porous confinement on the structural properties of the Gaussian core model"**
D. Schwanzer, D. Coslovich, J. Kurzidim, G. Kahl, Molecular Physics **107**, 433 (2009) [\[doi\]](#)
35. **"Single-Particle and Collective Slow Dynamics of Colloids in Porous Confinement"**
J. Kurzidim, D. Coslovich, G. Kahl, Physical Review Letters **103**, 138303 (2009) [\[doi\]](#)
36. **"Pressure-energy correlations and thermodynamic scaling in viscous Lennard-Jones liquids"**
D. Coslovich, C. Roland, The Journal of Chemical Physics **130**, 014508 (2009) [\[doi\]](#)
37. **"Density scaling in viscous liquids: From relaxation times to four-point susceptibilities"**
D. Coslovich, C. Roland, The Journal of Chemical Physics **131**, 151103 (2009) [\[doi\]](#)
38. **"Dynamics and energy landscape in a tetrahedral network glass-former: direct comparison with models of fragile liquids"**
D. Coslovich, G. Pastore, Journal of Physics: Condensed Matter **21**, 285107 (2009) [\[doi\]](#)
39. **"Thermodynamic Scaling of Diffusion in Supercooled Lennard-Jones Liquids"**
D. Coslovich, C. Roland, Journal of Physical Chemistry B **112**, 1329 (2008) [\[doi\]](#)

40. **“Understanding fragility in supercooled Lennard-Jones mixtures. I. Locally preferred structures”**
D. Coslovich, G. Pastore, *The Journal of Chemical Physics* **127**, 124504 (2007) [[doi](#)]
41. **“Understanding fragility in supercooled Lennard-Jones mixtures. II. Potential energy surface”**
D. Coslovich, G. Pastore, *The Journal of Chemical Physics* **127**, 124505 (2007) [[doi](#)]
42. **“Are there localized saddles behind the heterogeneous dynamics of supercooled liquids?”**
D. Coslovich, G. Pastore, *Europhys. Lett.* **75**, 784 (2006) [[doi](#)]

Invited talks at conferences

1. **“Dimensionality reduction of structure in glassy liquids”**
Machine Learning Glassy Dynamics, Collège de France (France), 2022
2. **“Glass structure through the prism of clustering”**
Glassy Systems and Inter-Disciplinary Applications, Institut d'Etudes Scientifiques de Cargèse (France), 2021
3. **“Distributional clustering approach to the heterogeneity of supercooled liquids”**
Digital meeting - Recent advances on the glass problem, CECAM (Switzerland), 2021
4. **“A new characteristic temperature for glassy dynamics”**
Viscous Liquids and the Glass Transition (XVI), Holbaek (Denmark), 2019
5. **“Towards a coherent picture of the mode-coupling glass crossover”**
The Physical Society of Japan 2019 Annual (74th) Meeting, Fukuoka (Japan), 2019
6. **“Dynamic crossover in glass-forming liquids: Insights from multi-GPU simulations”**
Viscous Liquids and the Glass Transition (XV), Holbaek (Denmark), 2018
7. **“Probing the laboratory glass transition with swap Monte Carlo simulations”**
Workshop on Glass Transition and Active Matter, Strasbourg (France), 2017
8. **“Equilibrium simulations of supercooled liquids beyond the laboratory glass transition”**
CECAM workshop “Recent Advances on the Glass and Jamming Transitions”, Lausanne (Switzerland), 2017
9. **“Non-universal role of local structure around the dynamic crossover”**
CECAM workshop “The role of local structure in dynamic arrest”, Mainz (Germany), 2015
10. **“The dynamic crossover - insights from numerical simulations”**
Viscous Liquids and the Glass Transition (XIII), Holbaek (Denmark), 2015
11. **“Quantifying structure-dynamics correlations in glassy systems”**
Viscous Liquids and the Glass Transition. XII, Holbaek (Denmark), 2014
12. **“Gaussian particles at high density: local structure and slow dynamics”**
7th International Discussion Meeting on Relaxations in Complex Systems, Barcelona (Spain), 2013
13. **“Ultrasoft primitive model of polyelectrolytes in solution”**
32nd International Conference on Solution Chemistry, La Grande Motte (France), 2011
14. **“Amorphous order and unstable modes in close-packed and network glasses”**
COST Workshop on Physics of Amorphous Solids, Les Houches (France), 2010
15. **“Strongly correlating liquids and density scaling of the dynamics: Examples and counterexamples from hard and soft matter”**
International Discussion Meeting on Relaxation in Complex Systems 6th, Rome (Italy), 2009
16. **“Density scaling of the dynamics and pressure-energy correlations in fragile glass-formers”**
Viscous Liquids and the Glass Transition VII, Holbaek (Denmark), 2009
17. **“Linking slow dynamics and local structure in simple models of glass-forming liquids”**
15th International Congress on Rheology, Monterey (U.S.), 2008

Contributed talks at conferences

1. **“Unsupervised learning of structure in glassy binary mixtures”**
Disorder’s Role in Glass Formation and Deformation, Lorentz Center (Netherlands), 2022
2. **“Clear-cut determination of the mode-coupling crossover in glass-forming liquids”**
Journées de Physique Statistique 2019, Paris (France), 2019
3. **“Does swap Monte Carlo accelerate nucleation more than structural relaxation?”**
Unifying Concepts in Glass Physics VII, Bristol (U.K.), 2018
4. **“Catching up with experiments: Equilibrium simulations of supercooled liquids beyond laboratory time scales”**
10th Liquid Matter Conference, Ljubljana (Slovenia), 2017
5. **“Static sources of dynamic fluctuations in glass-formers”**
Statphys 26, Lyon (France), 2016
6. **“Local structure and dynamic heterogeneity: do they correlate?”**
Unifying Concepts in Glass Physics VI, Aspen (U.S.), 2015
7. **“Probing length scales in viscous liquids by random pinning”**
2nd International Workshop on Nonlinear Response in Complex Matter, Erlangen (Germany), 2013
8. **“Many-body static correlations and fragility of viscous liquids”**
Unifying concepts in glass physics V, Paris (France), 2011
9. **“Slow dynamics in cluster crystals and cluster glasses”**
International Workshop on Dynamics in Viscous Liquids, Rome (Italy), 2011
10. **“Understanding fragility in supercooled liquids: Role of locally preferred structures and energy landscape”**
CECAM Workshop “Glasses meet glasses”, Lyon (France), 2007
11. **“Dynamical heterogeneities and localized saddles in supercooled Lennard-Jones mixtures”**
CCP5 Summer Schol 2006, Cardiff (U.K.), 2006

Seminars

1. **“Recent breakthroughs in the glass transition problem”**
Department of Mathematics and Physics, Università di Roma Tre, Rome (Italy), 2023
2. **“Dynamic crossover and localization transition in glassy liquids”**
Department of Applied Physics, Eindhoven University of Technology, Eindhoven (Netherlands), 2023
3. **“Statistical inference of structural communities in supercooled liquids”**
Laboratoire de Physiques de Solides, Université Paris-Sud, Paris (France), 2020
4. **“Structural communities”**
Meeting of the Simons collaboration “Cracking the glass problem”, Royaumont (France), 2019
5. **“A sharper view of glass formation”**
Department of Basic Science, University of Tokyo, Tokyo (Japan), 2019
6. **“Dynamic and thermodynamic crossovers on the way to glass formation”**
Department of Physics, University of Nagoya, Nagoya (Japan), 2019
7. **“Equilibrium simulations of supercooled liquids beyond laboratory time scales”**
University of Bristol, Bristol (United Kingdom), 2017
8. **“HPC and atomistic simulations”**
HPC@LR computing center, University of Montpellier, Montpellier (France), 2016

9. **“Disks, spheres and hyper-spheres: from order to disorder in condensed matter”**
Colloquium Alumnorum, University of Trieste, Trieste (Italy), 2016
10. **“Structure-dynamics relationship in glass-forming liquids”**
Roskilde University, Roskilde (Denmark), 2013
11. **“Structural motifs, heterogeneity and dynamics in glassy systems”**
Jozef Stefan Institute, Ljubljana, (Slovenia), 2010
12. **“Amorphous order and dynamic heterogeneity in glass-forming liquids”**
Laboratoire des Colloïdes, Verres et Nanomatériaux, Montpellier (France), 2010
13. **“Snapshots of glassy energy landscapes”**
Vienna University, Vienna (Austria), 2009
14. **“Close-packed and network-forming glasses: Two distinct universality classes?”**
Science College Seminar, Vienna (Austria), 2009
15. **“Localized saddles of the potential energy surface and dynamical heterogeneities in supercooled Lennard-Jones liquids”**
Van t Hoff Institute, Amsterdam (The Netherlands), 2006

Academic service

- International relations delegate at the Physics Department 2022–
University of Trieste
- Member of the Ph.D. program committee in Applied Data Science and Artificial Intelligence 2021–
University of Trieste
- Member of selection committees for researchers and associate professors 2021–
Department of Physics, University of Trieste
- Member of admission committee for the Collegio “Luciano Fonda” 2020/07
Collegio “Luciano Fonda”, University of Trieste
- Member of Ph.D. hiring committee 2019/06
École doctorale I2S, University of Montpellier
- Head of the “Statistical Physics” group at the Charles Coulomb Laboratory 2016–2019
University of Montpellier
- Member of “comité de section” (expert pool) CNU 28 2017–
University of Montpellier

Conferences’ organization

- Member of programme committee, “International Workshop on Dynamics in Viscous Liquids” 2015/05
Montpellier (France)
- Co-organizer of mini-colloquium “Fluids in confinement in and out of equilibrium” 2014/08
Journées de la Matière Condensée 14, Paris (France)
- Co-organizer of workshop “Complex dynamics of fluids in disordered and crowded environments” 2010/06
CECAM, Lyon (France)
Workshop proceedings: J. Phys.: Condens. Matter 23, 230302 (2011)

Refereeing

– Referee for peer-review journals:

European Journal of Physics B
Journal of Chemical Physics
Journal of Non-Crystalline Solids
Journal of Physical Chemistry B
Journal of Physics: Condensed Matter
Journal of Statistical Mechanics
Molecular Physics
Nature Communications
Nature Physics
Physical Review B
Physical Review E
Physical Review Letters
Physical Review Research
Physical Review X
Proceedings of the National Academy of Sciences
Soft Matter
Science Advances
Scientific Reports
SciPost Physics

– Reviewer for research funding agencies:

Agence Nationale de la Recherche (ANR, French national research agency)
Deutsche Forschungsgemeinschaft (DFG, German national funding agency)
Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO, Dutch Research Council)
Swiss National Science Foundation (SNSF)
Université franco-allemande (France-Germany)
Fondo Sociale Europeo, Regione Friuli Venezia-Giulia (Italy)
Programma "Rita Levi Montalcini" (MIUR, Italian Ministry of University and Research)
Labex PALM, Paris-Saclay (France)

Participation to Ph.D. committees

- Member of the committee of the Ph.D. thesis of Chengjie Luo 2023/01
Eindhoven University of Technology
- External examiner of the Ph.D. thesis of Vinay Vaibhav 2022/10
The Institute of Mathematical Sciences, Chennai
- Member of the committee of the Ph.D. thesis of Zeno Filiberti 2021/03
Università dell'Insubria
- External examiner and member of the committee of the Ph.D. thesis of Susana Marín Aguilar 2020/12
Université Paris-Sud
- External examiner and member of the committee of the Ph.D. thesis of Thomas Konincks 2017/11
Ecole Normale Supérieure de Lyon (France)
- External examiner and member of the committee of the Ph.D. thesis of Céline Ruscher 2017/10
Université de Strasbourg (France)
- External examiner and member of the committee of the Ph.D. thesis of Rhiannon Pinney 2017/02
University of Bristol (U.K.)
- External examiner and member of the committee of the Ph.D. thesis of Lorenzo Costigliola 2016/09
Roskilde University (Denmark)
- External examiner and member of the committee of the Ph.D. thesis of Marco Bernabei 2011/04
Universidad del País Vasco, San Sebastian (Spain)

Teaching

Between 2010 and 2020, I taught at the Faculté de Sciences at the University of Montpellier, both at the Licence and Master level, on several topics including **classical mechanics** (courses: “Physique générale”, “Physique pour la Biologie”, “Dynamique newtonienne”), **thermodynamics** (courses: “Thermodynamique 2”, “Thermodynamique Physique”, “Thermodynamique”), **waves** (course: “Clés et outils pour l’environnement”), **dynamical systems and population dynamics** (course: “Modélisation et Algorithmique”), **computer simulations** of population dynamics and random walks in Python (course: “Modélisation et Algorithmique”), **molecular dynamics simulations** (courses: “Simulations atomistiques avancées”, “Simulation des propriétés physiques des matériaux”), **parallel computing** and **code optimization** (courses: “Simulations atomistiques avancées”, “Grille et optimisation”).

My teaching duties took into account additional **teaching services** and **student supervision** (“stages”). Between 2012-2013 and 2017-2018, I enjoyed a reduction of the teaching load of 64h as a participant to the ERC project “Statistical physics of dense particle systems in the absence of thermal fluctuations”.

2021-2022

- Fisica dei sistemi disordinati (II livello) 48h
- Introduzione alla fisica (II livello) 72h

2020-2021

- Fisica dei sistemi disordinati (II livello) 48h
- Introduzione alla fisica (II livello) 72h

2019-2020

- Simulations atomistiques avancées (II livello) 15 h (CM), 12 h (TP)
- Modélisation et Algorithmique 2 (I livello) 9h (CM), 22 h (TP)
- Thermodynamique 2 (I livello) 9 h (CM), 24 h (TD)
- Physique pour la Biologie (I livello) 9 h (TP)
- Introduction à la physique quantique (I livello) 21 h (TD)
- Physique générale (I livello) 21 h (TD)

2018-2019

- Simulations atomistiques avancées (II livello) 15 h (CM), 15 h (TP)
- Modélisation et Algorithmique 2 (I livello) 9h (CM), 25.5 h (TP)
- Thermodynamique 2 (I livello) 9 h (CM), 27 h (TD)
- Physique pour la Biologie (I livello) 9 h (TP)
- Physique générale (I livello) 48 h (TD)

2017-2018

- Simulations atomistiques avancées (II livello) 15 h (CM), 15 h (TP)
- Modélisation et Algorithmique 2 (I livello) 25.5 h (TP)
- Thermodynamique 2 (I livello) 9 h (CM), 30 h (TD)
- Physique pour la Biologie (I livello) 6 h (TP)

2016-2017

- Simulations atomistiques avancées (II livello) 15 h (CM), 15 h (TP)
- Modélisation et Algorithmique 2 (I livello) 25.5 h (TP)
- Thermodynamique 2 (I livello) 9 h (CM), 30 h (TD)
- Physique pour la Biologie (I livello) 9 h (TP)

2015-2016

- Simulations atomistiques avancées (II livello) 15 h (CM), 17.5 h (TP)
- Modélisation et Algorithmique 2 (I livello) 25.5 h (TP)
- Thermodynamique 2 (I livello) 9 h (CM), 15 h (TD)
- Physique pour la Biologie (I livello) 9 h (TP)

2014-2015

- Modélisation et Algorithmique 2 (I livello) 25.5 h (TP)
- Thermodynamique (I livello) 24 h (CM), 25.5 h (TD)
- Simulation des propriétés physiques des matériaux (II livello) 3 h (CM), 5 h (TP)
- Grille et optimisation (II livello) 12 h (CM), 21 h (TP)

2013-2014

- Modélisation algorithmique en physique (I livello) 25.5 h (TP)
- Thermodynamique Physique (I livello) 24 h (CM), 25.5 h (TD)
- Simulation des propriétés physiques des matériaux (II livello) 5 h (CM), 5 h (TP)
- Grille et optimisation (II livello) 9 h (CM), 3 h (TD), 12 h (TP)

2012-2013

- Thermodynamique Physique (I livello) 24 h (CM), 25.5 h (TD)
- Simulation des propriétés physiques des matériaux (II livello) 5 h (CM), 5 h (TP)
- Grille et optimisation (II livello) 9 h (CM), 3 h (TD), 12 h (TP)

2011-2012

- Clés et outils pour l'environnement 2 (I livello) 9 h (CM), 33 h (TD)
- Modélisation algorithmique en physique (I livello) 25.5 h (TP)
- Thermodynamique et énergie (I livello) 51 h (TD)
- Dynamique newtonienne B (I livello) 30 h (TD)
- Dynamique newtonienne A (I livello) 42 h (TD)
- Simulation des propriétés physiques des matériaux (II livello) 5 h (CM), 5 h (TP)
- Grille et optimisation (II livello) 3 h (CM), 3 h (TP)

2010-2011

- Simulation des propriétés physiques des matériaux (II livello) 4.5 h (TP), 6h (CM)
- Thermodynamique Physique (I livello) 51h (TD)
- Physique Expérimentale (I livello) 34 h (TP), 33h (TD)

Teaching in foreign institutions

- Lab session on "Molecular Dynamics / Glasses": 3h 20/09/2015
DPG School on Computational Physics of Complex and Disordered Systems, Bad Honnef (Germany)
- Lab session "Python for physicists" on the Python language: 3h 19/03/2019
Department of Physics, University of Tokyo (Japan)

Teaching service

- Tutorials on computer science for graduate students in Physics 2021–
University of Trieste
- Coordinator of the teaching committee on thermodynamics and statistical physics courses 2019
Département d'enseignement de Physique, University of Montpellier
- Tutorials on atomistic simulations on GPUs for undergraduate students in Physics 2016–2020
University of Montpellier
- Teaching supervisor of the 2nd year of Physics ("responsable d'année") 2015–
University of Montpellier
- Member of the teaching committee to organize Physics courses 2013
Département d'enseignement de Physique, University of Montpellier

Students' supervision

Ph.D. students

- Advisor of Marco Dirindin 2023–
University of Trieste
- Advisor of Leonardo Galliano 2023–
University of Trieste
- Advisor of Joris Paret 2018–2021
University of Montpellier
- Co-advisor of Andrea Ninarello 2014–2017
University of Montpellier
- Co-advisor of Pascal Nadal 2013–2016
University of Montpellier

Master students

- Advisor of master thesis (M2 level) of Marco Dirindin 2022
Laurea magistrale in Fisica della Materia, University of Trieste
- Advisor of master thesis (M2 level) of Riccardo Rende 2021
Laurea magistrale in Fisica della Materia, University of Trieste
- Advisor of master thesis (M1 level) of Cyril Santi 2019
Master Nanophysique, University of Montpellier
- Advisor of master thesis (M1 level) of Florian Garcin 2019
Master Physique et Ingénierie du Vivant, University of Montpellier
- Advisor of master thesis (M2 level) of Athina Monemvassitis 2018
Ecole Normale Supérieure, Lyon
- Advisor of master thesis (M2 level) of Dwight Smite 2014
Master Physique-Informatique, University of Montpellier
- Advisor of master thesis (M2 level) of Pascal Nadal 2013
Master Physique-Informatique, University of Montpellier
- Co-advisor of master thesis (Master level) of Lukas Strauss 2009
Master, Institut für Theoretische Physik, TU Wien

Licence students

- Supervisor of L3 stage of Iacopo Ricci 2023
Department of Physics, University of Trieste
- Supervisor of L2 stage of Joumana Badran, Guilhem Charmasson 2019
Licence de Physique, University of Montpellier
- Supervisor of L2 stage of Joris Paret, Bastien Vincent 2015
Licence de Physique, University of Montpellier
- Supervisor of L2 stage of Sacha Foschino, Flavien Perez, Saida Righi 2014
Licence de Physique, University of Montpellier