

# GAIA CAMISASCA

## PERSONAL INFORMATION

*Address* Dipartimento di Matematica e Fisica, Università Roma Tre  
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## EDUCATION AND WORK EXPERIENCE

*RTD-A* Feb 2020–Present “Università Roma Tre”  
Atomistic simulations of liquids and soft matter.

*Assegnista di ricerca* Jun 2019–Jan 2020 “Sapienza Università di Roma”  
HyGate ERC project: Gating in model nanopores. Advisor: Prof. Alberto Giacomello

*Postdoc* Mar 2017–Apr 2019 “Stockholm University”  
Theoretical simulations to study dynamics and thermodynamics of supercooled water. Integration of user-defined analysis tools in GROMACS (C, C++). Advisor: Prof. Lars G.M. Pettersson

*PhD in Physics* Nov 2013–Feb 2017 “Università degli Studi Roma Tre”  
PhD in **Physics** at the **Department of Mathematics and Physics** of the university “Università degli Studi Roma Tre”. PhD research project in *Cryopreservation and dynamics of supercooled water solutions*. Supervisor: Prof. Paola Gallo

*Collaborator IUVS BL* Mar–Sept 2013 “Elettra Sincrotrone Trieste”  
Visible and UV Raman spectroscopies, visible and UV Brillouin on liquids. Development of data analysis programs. Technical Beamline Support.

*Master’s Degree in Physics* Jan 2009–Dec 2012 “Sapienza Università di Roma”  
Final Grade: 110/110 cum laude  
Curriculum: Condensed Matter Physics, Statistical Mechanics, Phase transitions and Critical phenomena, Liquids  
Master’s Thesis title: *High resolution Raman spectroscopy on acetamide-water solutions*. Thesis

project performed at the [Elettra Sincrotrone Trieste, IUVS BL EIS Group](#).  
Supervisors: Prof. Giancarlo Ruocco (Sapienza), Dr. Francesco D'amico (Elettra) and Dr. Claudio Masciovecchio (Elettra)

*Bachelor's Degree  
in Physics*

*Ott 2006-Nov 2009 "Sapienza Università di Roma"*

Final Grade: 110/110 cum laude

#### TEACHING ACTIVITIES

<i>Professor</i>	<i>2020</i>	<b>Complex Systems</b> Computational Science Master course at Roma Tre University, Math. and Phys. Dept.
<i>Teaching Assistant</i>	<i>2014-2017</i>	<b>Condensed Matter Physics</b> Master course of Prof. Paola Gallo at Roma Tre University, Math. and Phys. Dept.

#### COURSES & SCHOOLS IN COMPUTER SCIENCE

<i>13-21 Jul 2014</i>	CCP5 Summer School <i>Methods in Molecular Simulations</i> . Held at Manchester University.
<i>14-15 May 2015</i>	Course <i>Parallel IO and management of large scientific data</i> . Held at CINECA, Rome.
<i>23-25 Feb 2015</i>	Course <i>Introduction to Parallel Computing with MPI and OpenMP</i> . Held at CINECA, Rome.
<i>5-7 Feb 2016</i>	Course <i>High Performance Molecular Dynamics</i> . Held at CINECA, Rome.
<i>29 Nov-1 Dec 2017</i>	BioExcel training course <i>Hands-on Introduction to HPC for Life Scientists @ EPCC</i> . Held at EPCC, Edinburgh.
<i>25-29 Jun 2018</i>	CECAM School <i>Path Integral Quantum Mechanics: From the Basics to the Latest Developments</i> . Held at EPFL, Lausanne.
<i>25-26 Oct 2018</i>	PDC-PRACE training workshop: <i>HPC tools for the modern era</i> . Held at PDC, Stockholm.

#### WORKSHOPS, CONFERENCES & SCHOOLS IN PHYSICS

<i>18-22 Mar 2012</i>	XIII International Workshop on Complex Systems. Held at Andalo, Italy. <u>Poster Presented</u> .
<i>17-18 Sept 2014</i>	Workshop <i>Italian Soft Days</i> . Held at Sapienza Università di Roma, Rome.
<i>10-12 Jun 2015</i>	Workshop <i>Roma Tre Workshop on Water under Extreme Conditions</i> . Held at Università degli Studi Roma Tre, Rome. <u>Oral Presentation</u> .

- 7-12 Sept 2015 Conference *Frontiers in Water Biophysics*. Held at Ettore Majorana Foundation and Center for Scientific Culture in Erice, Italy. Poster Presented.
- 30 Nov-5 Dec 2015 Conference *MRS Fall Meeting and Exhibit 2015, Symposium Liquids and Glassy Soft Matter-Theoretical and Neutron Scattering Studies*. Held in Boston, USA. Poster Presented.
- 6-10 Jun 2016 Conference *Sitges Conference on Statistical Mechanics: "Nonequilibrium Phenomena in Con- fined Systems"*. Held in Barcelona, Spain. Oral Presentation.
- 23-26 Jul 2016 Conference *STAT-PHYS 2016 satellite meeting: Water X: exotic properties of water under extreme conditions*. Held in Nice, France. Poster Presented.
- 8-9 Jun 2017 CoT<sub>X</sub>S Mini-Workshop. Held at Stockholm University, Stockholm. Poster Presented.
- 14-16 Jun 2017 Workshop *Roma Tre Congress on Water under Extreme Conditions*. Held at Università degli Studi Roma Tre, Rome. Posters Presented.
- 25-26 Sept 2017 CoT<sub>X</sub>S Mini-Workshop. Held at Stockholm University, Stockholm.
- 4-1 Jul 2018 International School of Water and Water System, *Water and the water systems - The hydrophobic effect*. Held at Ettore Majorana Foundation and Center for Scientific Culture in Erice, Italy. Poster Presented & Oral Presentation.
- 22-27 Jul 2018 Gordon Research Conference *Water and Aqueous Solutions*. Held at Holderness, NH USA. Poster Presented.
- 7-13 Jul 2019 Summer School *Rare Events: Applications, Computation, and Theory*. Held at IIS, Bangalore. Poster Presented.

#### ORGANIZATION OF MEETINGS

- 10-12 Jun 2015 Local organizing committee "Roma Tre Workshop on Water under Extreme Conditions", Università degli Studi Roma Tre, Rome.
- 14-16 Jun 2017 Local organizing committee "Roma Tre Congress on Water under Extreme Conditions", Università degli Studi Roma Tre, Rome.
- 12-14 Jun 2019 Local organizing committee "*Roma Tre Congress on Water under Extreme Conditions*", Università degli Studi Roma Tre, Rome.

## AWARDS

- 2015 Travel grant, Ettore Majorana Foundation. I used the grant to participate to the conference Frontiers in Water Biophysics.
- 2017 BioExcel travel grant. I used the grant to participate to the EPCC training course.
- 2018 Scholarship, Royal Swedish Academy of Sciences. I used the grant to participate to the CECAM school on Path Integrals.
- 2018 Travel grant, Wenner-Gren Foundation. I used the grant to participate to the Gordon Research Conference on water.
- 2018 Travel grant, Ettore Majorana Foundation. I used the grant to participate to the Erice school on Water and water systems.

## Publications

- [1] **G. Camisasca**, M. De Marzio, M. Rovere, and P. Gallo. Erratum: High density liquid structure enhancement in glass forming aqueous solution of licl (journal of chemical physics (2018) 148 (222829) doi: 10.1063/1.5024375). *Journal of Chemical Physics*, 152(10), 2020.
- [2] A. Iorio, M. Minozzi, **G. Camisasca**, M. Rovere, and P. Gallo. Slow dynamics of supercooled hydration water in contact with lysozyme: examining the cage effect at different length scales. *Philosophical Magazine*, 2020.
- [3] A. Iorio, **G. Camisasca**, and P. Gallo. Glassy dynamics of water at interface with biomolecules: A mode coupling theory test. *Science China: Physics, Mechanics and Astronomy*, 62(10), 2019.
- [4] A. Iorio, **G. Camisasca**, M. Rovere, and P. Gallo. Characterization of hydration water in supercooled water-trehalose solutions: The role of the hydrogen bonds network. *Journal of Chemical Physics*, 151(4), 2019.
- [5] **G. Camisasca**, H. Pathak, K.T. Wikfeldt, and L.G.M. Pettersson. Radial distribution functions of water: Models vs experiments. *Journal of Chemical Physics*, 151(4), 2019.
- [6] **G. Camisasca**, D. Schlesinger, I. Zhovtobriukh, G. Pitsevich, and L.G.M. Pettersson. A proposal for the structure of high- and low-density fluctuations in liquid water. *Journal of Chemical Physics*, 151(3), 2019.
- [7] **G. Camisasca**, N. Galamba, K.T. Wikfeldt, and L.G.M. Pettersson. Translational and rotational dynamics of high and low density tip4p/2005 water. *Journal of Chemical Physics*, 150(22), 2019.

- [8] A. Iorio, **G. Camisasca**, and P. Gallo. Slow dynamics of hydration water and the trehalose dynamical transition. *Journal of Molecular Liquids*, 282:617–625, 2019.
- [9] F. Perakis, **G. Camisasca**, T.J. Lane, A. Sph, K.T. Wikfeldt, J.A. Sellberg, F. Lehmkhler, H. Pathak, K.H. Kim, K. Amann-Winkel, S. Schreck, S. Song, T. Sato, M. Sikorski, A. Eilert, T. McQueen, H. Ogasawara, D. Nordlund, W. Roseker, J. Koralek, S. Nelson, P. Hart, R. Alonso-Mori, Y. Feng, D. Zhu, A. Robert, G. Grbel, L.G.M. Pettersson, and A. Nilsson. Coherent x-rays reveal the influence of cage effects on ultrafast water dynamics /639/766/94 /639/766/930/2735 /145 /123 article. *Nature Communications*, 9(1), 2018.
- [10] **G. Camisasca**, A. Iorio, M. De Marzio, and P. Gallo. Structure and slow dynamics of protein hydration water. *Journal of Molecular Liquids*, 268:903–910, 2018.
- [11] D. Mariedahl, F. Perakis, A. Sph, H. Pathak, K.H. Kim, **G. Camisasca**, D. Schlesinger, C. Benmore, L.G.M. Pettersson, A. Nilsson, and K. Amann-Winkel. X-ray scattering and o-o pair-distribution functions of amorphous ices. *Journal of Physical Chemistry B*, 122(30):7616–7624, 2018.
- [12] **G. Camisasca**, M. De Marzio, M. Rovere, and P. Gallo. High density liquid structure enhancement in glass forming aqueous solution of licl. *Journal of Chemical Physics*, 148(22), 2018.
- [13] M. De Marzio, **G. Camisasca**, M. Rovere, and P. Gallo. Fragile to strong crossover and widom line in supercooled water: A comparative study. *Frontiers of Physics*, 13(1), 2018.
- [14] **G. Camisasca**, M. De Marzio, M. Rovere, and P. Gallo. Slow dynamics and structure of supercooledwater in confinement. *Entropy*, 19(4), 2017.
- [15] M. De Marzio, **G. Camisasca**, M. Rovere, and P. Gallo. Microscopic origin of the fragile to strong crossover in supercooled water: The role of activated processes. *Journal of Chemical Physics*, 146(8), 2017.
- [16] M. De Marzio, **G. Camisasca**, M.M. Conde, M. Rovere, and P. Gallo. Structural properties and fragile to strong transition in confined water. *Journal of Chemical Physics*, 146(8), 2017.
- [17] **G. Camisasca**, M. De Marzio, D. Corradini, and P. Gallo. Two structural relaxations in protein hydration water and their dynamic crossovers. *Journal of Chemical Physics*, 145(4), 2016.
- [18] M. De Marzio, **G. Camisasca**, M. Rovere, and P. Gallo. Fragile-to-strong crossover in supercooled water: A comparison between tip4p and tip4p/2005 models. *Nuovo Cimento della Societa Italiana di Fisica C*, 39(3), 2016.

- [19] M. De Marzio, **G. Camisasca**, M. Rovere, and P. Gallo. Mode coupling theory and fragile to strong transition in supercooled tip4p/2005 water. *Journal of Chemical Physics*, 144(7), 2016.
- [20] F. D'Amico, B. Rossi, **G. Camisasca**, F. Bencivenga, A. Gessini, E. Principi, R. Cucini, and C. Masciovecchio. Slow-to-fast transition of hydrogen bond dynamics in acetamide hydration shell formation. *Physical Chemistry Chemical Physics*, 17(16):10987–10992, 2015.
- [21] M. Saito, F. D'Amico, **G. Camisasca**, F. Bencivenga, R. Cucini, A. Gessini, E. Principi, T. Ogura, and C. Masciovecchio. Resonance raman spectroscopy with chemical state selectivity on histidine and acetamide using synchrotron radiation. *Bulletin of the Chemical Society of Japan*, 88(4):591–596, 2015.
- [22] F. D'Amico, F. Bencivenga, **G. Camisasca**, A. Gessini, E. Principi, R. Cucini, and C. Masciovecchio. Thermodynamic hydration shell behavior of glycine. *Journal of Chemical Physics*, 139(1), 2013.
- [23] F. D'amico, M. Saito, F. Bencivenga, M. Marsi, A. Gessini, **G. Camisasca**, E. Principi, R. Cucini, S. Di Fonzo, A. Battistoni, E. Giangrisostomi, and C. Masciovecchio. Uv resonant raman scattering facility at elettra. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 703:33–37, 2013.

June 17, 2020