PERSONAL INFORMATION

Family name, First name	Gori Giorgi, Paola
Date and place of birth	30 April 1971, Rome (Italy)
Nationality	Italian
E-mail	p.gorigiorgi.AT.vu.nl

EDUCATION

PhD

University	Department of Physics, University of Perugia (Italy)
Date of Award	14 February 2000
Supervisors	Prof. F. Sacchetti and Prof. G. B. Bachelet
Title of thesis	Electronic pair-distribution functions of jellium and real solids

Master ("Laurea")

University	Department of Physics, University of Rome "La Sapienza" (Italy)
Date of Award	29 February 1996
Supervisors	Prof. F. Melchiorri and Prof. F. A. Gianturco
Main subject	Cosmology and Astrochemistry
Title of thesis	Molecules in the early Universe
Final mark	110/110 ***cum laude***

CURRENT POSITIONS

2016 –	Full Professor, Department of Theoretical Chemistry, VU University, Amsterdam
2009 – present	Tenured Senior Researcher (CR1), French National Research Council (CNRS), Laboratoire de Chimie Théorique, Université Pierre et Marie Curie, Paris (France) [in temporary leave (détachement) since 2010]

PREVIOUS POSITIONS

2012 – 2015	Associate Professor, Department of Theoretical Chemistry, VU University, Amsterdam
2010 – 2012	Assistant Professor, Department of Theoretical Chemistry, VU University, Amsterdam
2005 – 2009	Tenured Junior Researcher (CR2), French National Research Council (CNRS), Laboratoire de Chimie Théorique, Université Pierre et Marie Curie, Paris (France)
2004	EU Marie Curie Fellow, Laboratoire de Chimie Théorique, Université Pierre et Marie Curie, (France)
2002 – 2003	Postdoctoral Fellow, Italian National Institute for Physics of Condensed Matter (INFM), Center for Statistical Mechanics and Complexity, Rome (Italy)
2001	Researcher, Department of Physics, University of Rome "La Sapienza" (Italy)
2000 – 2001	Postdoctoral Fellow, Department of Physics and Quantum Theory Group, Tulane University, New Orleans, Louisiana (USA)
1999 – 2000	Researcher, Department of Physics, University of Rome "La Sapienza" (Italy)
1996 – 1999	PhD Student, Department of Physics, University of Perugia (Italy)

FELLOWSHIPS AND AWARDS

2018 The Netherlands Organisation for Scientific Research (NWO) Innovational Research Incentives Scheme **Vici** (Talent scheme) *Disperion Interactions: A new theoretical approach in a pure density functional theory framework* (1.5M€)

2015 University Research Chair, Vrije Universiteit, Amsterdam, The Netherlands (75 K€)

2015 EU Horizon2020 **ERC Consolidator grant** *Improving the accuracy and reliability of electronic structure calculations: New exchange-correlation functionals from a rigorous expansion at infinite coupling strength* (2.0M€)

2011 The Netherlands Organisation for Scientific Research (NWO) **Aspasia** prize for excellent female academics (100K€)

2010 The Netherlands Organisation for Scientific Research (NWO) Innovational Research Incentives Scheme **Vidi** (Talent scheme) *Electronic density functional theory for strong-interacting systems* (800K€)

2004 **Marie Curie Intra European Fellowship**, *From rigorous models to accurate energy density functionals* (150 K€)

2000 Fellowship of the Italian Foundation "Angelo della Riccia" (15.3 K€)

VISITING SCIENTIST POSITIONS

2006 Quantum Theory Project, University of Florida (USA)
2002 Max Planck Institute for Physics of Complex Systems, Dresden (Germany)

ORGANIZATION OF INTERNATIONAL SCIENTIFIC CONFERENCES AND WORKSHOPS

2020 Organizer of the Faraday Discussion *New horizons in density functional theory*
2019 Organizer of the international workshop *Optimal Transport Methods in Density Functional Theory*, Banff International Research Station (BIRS), Canada
2017 Organizer of the international workshop *Optimal Transport meets Density Functional Theory*, Jyväskylä, Finland
2017 Organizer of the international conference *Promoting Female Excellence in Theoretical and Computational Chemistry*, Putten, The Netherlands
2015 Organizer of the international workshop *Advances in Electronic Structure Theory*, Jussieu Campus, Paris, France
2015 Organizer of the international conference *Computer Simulations for Condensed Phase Systems*, CNR Headquarters, Rome, Italy
2015 Organizer of the *Evert Jan Baerends Symposium*, VU University, Amsterdam, The Netherlands

INSTITUTIONAL RESPONSABILITIES

2012 – present Member of the Works Council, Faculty of Exact Sciences, VU University Amsterdam, The Netherlands
2012 – present Organizer of the Amsterdam Center for Multiscale Modeling (ACMM) Symposia (see http://www.acmm.nl/)
2011 – 2014 Member of the Public Relation Committee, Department of Chemistry, VU University Amsterdam, The Netherlands

COMMISSIONS OF TRUST

2017 - 2018 Panel member START UP grant, Netherlands Organisation for Scientific Research (NWO)
2017 Member of the selection committee for the University Research Chair (VU, Amsterdam)
2015 and 2017 Panel member for the Vidi (Chemistry) grants committee, Netherlands Organisation for Scientific Research (NWO)
2014 Panel member for the ECHO (Excellent Chemical Research) grants committee, Netherlands Organisation for Scientific Research (NWO)
2014 - present Member of several search committees for Assistant, Associate and Full Professor, VU University Amsterdam

MENTORING IN INTERNATIONAL PROGRAMS

2015 Mentor for the ProFiL-Programme (Technische Universität, the Humboldt Universität and the Freie Universität Berlin, Germany). ProFiL supports the career of the female researchers and prepares them for future leadership and management requirements of a professorship.

MEMBERSHIP OF INTERNATIONAL SCIENTIFIC BOARDS

2015 – present DFT International Scientific Committee (organizing the *International Conferences on Density-Functional Theory and its Applications*)
2019 – 2020 Member of the International Advisory Board, Psi-k 2020 Conference

MEMBERSHIP OF NATIONAL SCIENTIFIC BOARDS AND RESEARCH CENTERS

2019 – QuSoft: Research Center for Quantum Software
2019 – Klankbordgroep Nationale Agenda Quantum Technologie
2010 – Amsterdam Center for Multiscale Modeling (VU-UvA)

EDITORIAL ACTIVITIES

2021 - Editorial Advisory Board Member, *Journal of Physical Chemistry Letters* (ACS)
2018 - Editorial Board Member of *Electronic Structure (IOP Science)*
2016 Editor (with T. Helgaker, G. E. Scuseria, B. Silvi and J. Toulouse) of the *Special Issue in honour of Andreas Savin* in Molecular Physics (volume 114, issues 7-8).

SUPERVISION AND LEADERSHIP RESPONSABILITIES

2010 – present 1 UD, 9 Postdocs, 6 PhD Students
Department of Theoretical Chemistry, VU University Amsterdam (The Netherlands)

MAJOR COLLABORATIONS

- E. J. Baerends (VU University, Amsterdam, The Netherlands): *Fundamental aspects of KS DFT*
- G. Buttazzo and L. De Pascale (Mathematics, University of Pisa, Italy): *Optimal Transport and DFT*
- S. Di Marino (Mathematics, Scuola Normale di Pisa, Italy): *Optimal Transport and DFT*
- A. Cohen and P. Mori-Sanchez (Chemistry, Cambridge and Madrid): *Exact HK functional and SCE*
- F. Della Sala and E. Fabiano (CNR Lecce, Italy): *Benchmarking functionals based on SCE*
- R. van Leeuwen (Physics, Jyväskylä University, Finland): *time-dependent SCE*
- M. Lewin (Matematics, CEREMADE, Paris Dauphine): *jellium, Lieb-Oxford bound*
- J. Lorenzana (Physics, University of Rome "La Sapienza", Italy): *Lattice hamiltonians and DFT*
- S. Moroni (SISSA, Trieste, Italy): *Functionals for range-separated DFT from QMC*
- Z. Musslimani (Mathematics, Florida State University, USA): *SCE applied to disordered systems*
- J. P. Perdew (Physics, Temple University, USA): *Functionals from exact constraints and SCE*
- E. Räsänen (Physics, Tempere University, Finland): *Lieb-Oxford bound and SCE*
- S. M. Reimann (Physics, Lund University, Sweden): *SCE applications: quantum dots, cold atoms,...*
- A. Rubio (Physics, Basque Country University, Spain): *charge transfer with the SCE functional*
- A. Savin (Chemistry, CNRS, University Paris VI, France): *SCE and range separation*
- A. Teale (Chemistry, Nottingham University, UK): *exact quantities along the adiabatic connection*
- C. J. Umrigar (Physics, Cornell University, USA): *QMC results to benchmark SCE DFT*
- C. Verdozzi (Physics, Lund University, Sweden): *Green's functions and SCE*
- G. Vignale (Physics, University of Missouri, USA): *higher-order corrections to SCE*

CAREER BREAKS

September 2010 – January 2011 Maternity leave (6 months)
January 2007 – June 2007 Maternity leave (6 months)

SCIENTIFIC HIGHLIGHTS AND HONOURS

2018 Interviewed for the NWO ENW nieuwsbrief
2015 *University Research Chair* (VU Amsterdam). The URC is a selective and privileged appointment as full professor for excellent researchers (www.vu.nl/en/research/topresearchers-at-vu/university-research-chair)
2015 Interviewed for *Elements*, the NWO annual magazine of chemical sciences.
2013 Chosen by the Netherlands Organisation for Scientific Research (NWO) for the vision document *Chemistry & Physics, Fundamental For Our Future.* The document describes the ambitions of the Netherlands for physics and chemistry for the next ten years and can be downloaded at www.nwo.nl/en/news-and-events/news/2013/cw/vision-document-chemistry-and-physics-in-2025-presented.html.
2012 Nominated by NWO for *AcademiaNet: Profiles of Leading Women Scientists* (www.academia-net.org)

POWER OF ATTRACTION TO YOUNG TALENTS

I have attracted very talented young researchers who have been awarded prestigious grants to work in my group: a Veni fellow (K. Giesbertz), and 4 Marie Curie IEF, of which three in Physics (F. Malet, G. Lani, Z. Musslimani) and one in Mathematics (A. Gerolin).
I have also had excellent PhD students among whom S. Vuckovic (cum laude) who has been awarded the Rubicon NWO grant to be a postdoctoral fellow at Irvine California (Burke group) and the Dick Stufkens prize for most outstanding PhD thesis of the Holland Research School of Molecular Chemistry.

SPOKEN LANGUAGES

Italian (mother tongue), English, French, Dutch

On-going Grants

Project Title	*Funding Source*	*Amount*	*Period*	*Role*
Dispersion Interactions: a new theoretical approach in a pure Density Functional Theory framework	The Netherlands Organisation for Scientific Research (NWO) – Innovational Research Incentives Scheme **Vici** (Talent scheme)	1.5 M€	2019-2024	principal investigator
Disordered and strongly-correlated systems: a new theoretical approach	EU – H2020 People Marie Curie **Intra European Fellowship** Physics Panel (Fellow: Prof. dr. Z. Musslimani)	180 K€	2019-2021	host scientist in charge
Multi-marginal Optimal Transport and Density Functional Theory: a mathematical setting for physical ideas	EU – H2020 People Marie Curie **Intra European Fellowship** Mathematics Panel (Fellow: dr. A. Gerolin)	180 K€	2019-2021	host scientist in charge

Previous Grants

Project Title	*Funding Source*	*Amount*	*Period*	*Role*
Improving the accuracy and reliability of electronic structure calculations: New exchange-correlation functionals from a rigorous expansion at infinite coupling strength	EU – Horizon2020 **ERC Consolidator Grant** Panel : PE4	2.0 M€	2015-2020	principal investigator
Strongly-correlated bosonic and fermionic ultracold atomic gases with long-range interactions: a new theoretical approach	Foundation for Fundamental Research on Matter (FOM) - **Projectruimte**	220 K€	2016-2019	principal investigator
The strictly-correlated-electrons approach at work for Chemistry: Density Functionals for transition metals and accurate excitation energies	The Netherlands Organisation for Scientific Research (NWO) - Free competition **ECHO**	260 K€	2013-2017	principal investigator
Time-dependent density functional theory for strongly-interacting electrons	EU – FP7 People Marie Curie **Intra European Fellowship** Physics Panel (Fellow: Dr. G. Lani)	180 K€	2014-2016	host scientist in charge
Strictly-correlated Density Functional Theory: methodology development and application to semiconductor nanostructures and ultracold atom gases	EU – FP7 People Marie Curie **Intra European Fellowship** Physics Panel (Fellow: Dr. F. Malet)	180 K€	2013-2015	host scientist in charge
Electronic density functional theory for strong-interacting systems	The Netherlands Organisation for Scientific Research (NWO) – Innovational Research Incentives Scheme **Vidi** (Talent scheme). Interdivisional panel	800 K€	2010-2015	principal investigator

INVITED TALKS (SELECTION) AT INTERNATIONAL CONFERENCES AND WORKSHOPS

I have been an invited speaker at about **50 international conferences** in the fields of Condensed Matter Physics, Quantum Chemistry and Mathematics. Here is a selection, divided by topic

Quantum and Theoretical Chemistry

2019 *10th Congress of the International Society for Theoretical Chemical Physics*, Tromso, Norway
2019 *9th Molecular Quantum Mechanics,* Heidelberg, Germany
2018 *Satellite meeting to 16th ICQC: Strong correlation in electronic structure theory*, Strasbourg, France
2018 *16th International Congress of Quantum Chemistry*, Menton, France
2017 *57th Sanibel Symposium,* St. Simons Island, Georgia, US
2014 *Promoting Female Excellence in Theoretical and Computational Chemistry II* , Oslo, Norway
2013 *7th Molecular Quantum Mechanics*, Lugano, Switzerland
2011 *European Seminar on Computational Methods in Quantum Chemistry 2011,* Oscarsborg, Norway
2009 *92nd Canadian Chemistry Conference and Exhibition*, Hamilton, Ontario, Canada
2008 *6th Congress of the International Society for Theoretical Chemical Physics* , Vancouver, BC, Canada
2007 *16th Canadian Symposium on Theoretical Chemistry*, St. John's, Newfoundland, Canada

Density Functional Theory in Electronic Structure

2019 *CECAM Workshop: Improving the theory in DFT*, Lausanne, Switzerland
2018 *Adventures in Density Functional Theory and Beyond*, ACS meeting, New Orleans, USA
2016 *Symposium Recent Advances in Density Functional Theory and Applications in Chemical Physics,* American Physical Society March Meeting, Baltimore, USA
2015 *16th International Conference on Density Functional Theory and its Applications*, Debrecen, Hungary
2015 *Workshop on Fundamental Aspects of DFT*, Oslo, Norway
2013 *CECAM Workshop: Density Functional Theory: learning from the past, looking to the future*, Berlin, Germany
2012 *Challenges in Density Matrix and Density Functional Theory*, Ghent, Belgium
2011 *14th International Density Functional Theory (DFT) Conference*, Athens, Greece
2011 *CECAM Workshop: How to speed up progress and reduce empiricism in Density Functional Theory*, Dublin, Ireland
2010 *IX Girona Seminar: Electron Density, Density Matrices and Density Functional Theory*, Girona, Spain
2006 *Frontier Applications and Developments of Density Functional Theory*, ACS Meeting, Atlanta, USA

Condensed Matter Theory; Electronic Structure in Physics; Many-body Physics

2017 *Frontiers of Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond*, Focus Session at the DPG Spring Meeting, Dresden, Germany
2017 *18th International Workshop on Computational Physics and Materials Science: Total Energy and Force Methods*, Trieste, Italy
2016 *7th Time-Dependent Density Functional Theory: Prospects and Applications*, Benasque, Spain
2016 *Condensed Matter Theory Division (European Physical Society) Topical Session on Theoretical spectroscopy: extending the ab-initio landscape*, Groningen, The Netherlands
2015 *Methods and Algorithms in Electronic Structure Theory*, Ringberg Castle, Germany
2015 *Psi-k 2015 Conference,* San Sebastian, Spain
2013 *CECAM Workshop: Green's functions Methods: the next generation*, Toulouse, France
2014 *CECAM Workshop: What about U? - Strong correlations from first principles,* Lausanne, Switzerland
2013 *16th International Workshop on Computational Physics and Materials Science: Total Energy and Force Methods*, Trieste, Italy
2012 *Low-scaling and Unconventional Electronic Structure Techniques (LUEST) Conference*, Telluride Science Research Center, Colorado, USA
2011 *Symposium on Many-electron approaches in Material Science; Mainz Materials Simulation Days 2011,* Mainz, Germany
2006 *30th International Workshop on Condensed Matter Theories*, Dresden, Germany
2004 *Third International Workshop on Electron Correlations and Materials Properties*, Kos, Greece
2004 *28th International Workshop on Condensed Matter Theories*, St. Louis, USA

Optimal Transport, Mathematical Physics, Applied Mathematics

2019 *Workshop Optimal Transport: from Geometry to Numerics*, ESI, Vienna, Austria
2017 *Applications of Optimal Transportation in the Natural Sciences*, Oberwolfach, Germany
2016 *Putting the Theory Back in Density Functional Theory*, Institute for Pure and Applied Mathematics (IPAM) workshop and school, University of California, Los Angeles, USA
2015 *New Trends in Optimal Transport*, Bonn, Germany
2013 *Semiclassical Origins of Density Functional Approximations,* Institute for Pure and Applied Mathematics (IPAM) workshop, University of California, Los Angeles, USA
2013 *Symposium "Electronic Structure" at Society for Industrial and Applied Mathematics (SIAM) Conference on Mathematical Aspects of Materials Science*, Philadelphia, USA
2012 *ERC Workshop on Optimal Transportation and Applications*, Pisa, Italy

SCIENTIFIC PUBLICATIONS

[82] T.J. Daas, E. Fabiano, F. Della Sala, P. Gori-Giorgi, S. Vuckovic
Noncovalent interactions from models for the Møller-Plesset adiabatic connection
submitted to JPCL, arXiv:2104.04793

[81] T.J. Daas, J. Grossi, S. Vuckovic, Z.H. Musslimani, D.P. Kooi, M. Seidl, K.J.H. Giesbertz, P. Gori-Giorgi
Large coupling-strength expansion of the Møller-Plesset adiabatic connection: From paradigmatic cases to variational expressions for the leading terms
J. Chem. Phys. 153, 214112 (2020)

[80] D. P. Kooi and P. Gori-Giorgi
London dispersion forces without density distortion: a path to first principles inclusion in density functional theory
Faraday Discussions 224, 145 (2020)

[79] J. Grossi, Z. H. Musslimani, M. Seidl, P. Gori-Giorgi
Kohn-Sham equations with functionals from the strictly-correlated regime: Investigation with a spectral renormalization method
J. Phys.: Cond. Matt. 32 475602 (2020)

[78] D. P. Kooi, T. Weckman, P. Gori-Giorgi
Dispersion without many-body density distortion: Assessment on atoms and small molecules
J. Chem. Theory Comput., 17, 2283 (2021)

[77] S. Vuckovic, E. Fabiano, P. Gori-Giorgi, K. Burke
MAP: an MP2 accuracy predictor for weak interactions from adiabatic connection theory
J. Chem. Theory Comput. 16, 4141 (2020)

[76] A. Gerolin, J. Grossi, P. Gori-Giorgi
Kinetic correlation functionals from the entropic regularisation of the strictly-correlated electrons problem
J. Chem. Theory Comput. 16, 488 (2020)

[75] S. Giarrusso, P. Gori-Giorgi
Exchange-Correlation Energy Densities and Response Potentials: Connection Between Two Definitions and Analytical Model for the Strong-Coupling Limit of a Stretched Bond
J. Phys. Chem. A 124, 2473 (2020)

[74] J. Grossi, M. Seidl, P. Gori-Giorgi, K.J.H. Giesbertz
Functional Derivative of the Zero Point Energy Functional from the Strong Interaction Limit of Density Functional Theory
Phys. Rev. A 99, 052504 (2019)

[73] D. P. Kooi, P. Gori-Giorgi
A variational approach to London dispersion interactions without density distortion

J. Phys. Chem. Lett. 10, 1537 (2019)

[72] E. Fabiano, S. Śmiga, S. Giarrusso, T. J. Daas, F. Della Sala, I. Grabowski, P. Gori-Giorgi
Investigation of the exchange-correlation potential of functionals based on the adiabatic connection interpolation
J. Chem. Theory Comput. 15, 1006 (2019)

[71] M. Seidl, S. Giarrusso, S. Vuckovic, E. Fabiano, P. Gori-Giorgi
Strong-interaction limit of an adiabatic connection in Hartree-Fock theory
J. Chem. Phys. 149, 241101 (2018) (**Communication**)

[70] D. P. Kooi and P. Gori-Giorgi
Local and global interpolations along the adiabatic connection of DFT: A study at different correlation regimes
Theor. Chem. Acc. 137, 166 (2018) (special issue Ad Memoriam Janos Angyan)

[69] S. Giarrusso, S. Vuckovic, P. Gori-Giorgi
Response potential in the strong-interaction limit of DFT: Analysis and comparison with the coupling-constant average
J. Chem. Theory Comput., 14, 4151 (2018)

[68] S. Giarrusso, P. Gori-Giorgi and K. J. H. Giesbertz
Sum-rules of the response potential in the strongly-interacting limit of DFT
Eur. Phys. J. B 91, 186 (2018) (special issue in honour of E.K.U. Gross)

[67] P. Gori-Giorgi and E. J. Baerends
Asymptotic nodal planes in the electron density and the potential in the effective equation for the square root of the density
Eur. Phys. J. B 91, 160 (2018) (special issue in honour of E.K.U. Gross)

[66] S. Vuckovic, P. Gori-Giorgi, F. Della Sala, E. Fabiano
Restoring size consistency of approximate functionals constructed from the adiabatic connection
J. Phys. Chem. Lett. 9, 3137 (2018).

[65] S. Giarrusso, P. Gori-Giorgi, F. Della Sala, E. Fabiano
Assessment of interaction-strength interpolation formulas for gold and silver clusters
J. Chem. Phys. 148, 134106 (2018).

[64] S. Vuckovic, M. Levy, and P. Gori-Giorgi
Augmented potential, energy densities, and virial relations in the weak- and strong-interaction limits of DFT
J. Chem. Phys. 147, 214107 (2017). **Featured Article; Editor's Choice**

[63] J. Grossi, D. P. Kooi, K. J. H. Giesbertz, M. Seidl, A. J. Cohen, P. Mori-Sanchez, P. Gori-Giorgi
Fermionic statistics in the strongly correlated limit of Density Functional Theory
J. Chem. Theory Comput. 13, 6089 (2017)

[62] S. Vuckovic and P. Gori-Giorgi
Simple fully non-local density functionals for the electronic repulsion energy
J. Phys. Chem. Lett. 8, 2799 (2017); **highlighted in *Spotlights***

[61] M. Seidl, S. di Marino, A. Gerolin, L. Nenna, K.J.H. Giesbertz, and P. Gori-Giorgi
The strictly-correlated electron functional for spherically symmetric systems revisited
Phys. Rev. A, submitted (arXiv:1702.05022), needs to be revised and split in two articles

[60] S. Vuckovic, T.J.P. Irons, L.O. Wagner, A.M. Teale, and P. Gori-Giorgi
Interpolated energy densities, correlation indicators and lower bounds from approximations to the strong coupling limit of DFT
Phys. Chem. Chem. Phys. 19, 6169 (2017)

[59] E. Fabiano, P. Gori-Giorgi, M. Seidl and F. Della Sala
Interaction-Strength Interpolation Method for Main-Group Chemistry: Benchmarking, Limitations, and Perspectives
J. Chem. Theory Comput. 12, 4885 (2016)

[58] S. Vuckovic, T.J.P. Irons, A. Savin, A.M. Teale, and P. Gori-Giorgi
Exchange-correlation functionals via local interpolation along the adiabatic connection
J. Chem. Theory Comput. 12, 2598 (2016) (**ACS Editor's choice**)

[57] G. Lani, S. di Marino, A. Gerolin, R. van Leeuwen, and P. Gori-Giorgi
The adiabatic strictly-correlated electron functional: kernel and exact properties
Phys. Chem. Chem. Phys., 18, 21092 (2016)

[56] Z.-J. Ying, V. Brosco, G. M. Lopez, D. Varsano, P. Gori-Giorgi, and J. Lorenzana
Anomalous scaling and breakdown of conventional density functional theory methods for the description of Mott phenomena and stretched bonds
Phys. Rev. B 94, 075154 (2016)

[55] M. Seidl, S. Vuckovic, and P. Gori-Giorgi
Challenging the Lieb-Oxford bound in a systematic way
Mol. Phys. 114, 1076 (2016)

[54] P. Gori-Giorgi, T. Gal, and E. J. Baerends
Asymptotic behavior of the electron density and the Kohn-Sham potential in case of a Kohn-Sham HOMO nodal plane
Mol. Phys. 114, 1086 (2016)

[53] F. Malet, A. Mirtschink, C. B. Mendl, J. Bjerlin, E. O. Karabulut, S. M. Reimann, and P. Gori-Giorgi
Density functional theory for strongly-correlated bosonic and fermionic ultracold dipolar and ionic gases
Phys. Rev. Lett., 115, 033006 (2015) (**Editor's suggestion**)

[52] S. Vuckovic, L. O. Wagner, A. Mirtschink, and P. Gori-Giorgi
Hydrogen molecule dissociation curve with functionals based on the strictly-correlated regime
J. Chem. Theory Comput. 11, 3153 (2015)

[51] L. O. Wagner and P. Gori-Giorgi
Electron avoidance: A nonlocal radius for strong correlation
Phys. Rev. A 90, 052512 (2014)

[50] F. Malet, A. Mirtschink, K. J. H. Giesbertz, L. O. Wagner, and P. Gori-Giorgi
Exchange-correlation functionals from the strongly-interacting limit of DFT: Applications to model chemical systems
Phys. Chem. Chem. Phys. 16, 14551 (2014)

[49] A. Mirtschink, C. J. Umrigar, J. D. Morgan III, and P. Gori-Giorgi
Energy Density Functionals From the Strong-Coupling Limit Applied to the Anions of the He Isoelectronic Series
J. Chem. Phys. 140, 18A532 (2014) (invited article)

[48] C. B. Mendl, F. Malet, and P. Gori-Giorgi
Wigner localization in quantum dots from Kohn-Sham density functional theory without symmetry breaking
Phys. Rev. B 89, 125106 (2014)

[47] F. Malet, A. Mirtschink, K. J. H. Giesbertz, and P. Gori-Giorgi
Density Functional Theory for strongly-interacting electrons
in "Many-Electron Approaches in Physics, Chemistry and Mathematics: A Multidisciplinary View", Springer Verlag 2014, Book Series: Studies in Mathematical Physics, edited by L. Delle Site and V. Bach.

[46] A. Mirtschink, M. Seidl, and P. Gori-Giorgi
Derivative discontinuity in the strong-interaction limit of density functional theory
Phys. Rev. Lett. 111, 126402 (2013)

[45] F. Malet, A. Mirtschink, J. C. Cremon, S. M. Reimann, and P. Gori-Giorgi
Kohn-Sham density functional theory for quantum wires in arbitrary correlation regimes
Phys. Rev. B 87, 115146 (2013) (**Editor's suggestion**)

[44] F. Malet and P. Gori-Giorgi
Strong correlation in Kohn-Sham density functional theory
Phys. Rev. Lett. 109, 246402 (2012)

[43] A. Mirtschink, M. Seidl, and P. Gori-Giorgi
Energy densities in the strong-interaction limit of density functional theory
J. Chem. Theory Comput. 8, 3097 (2012)

[42] G. Buttazzo, L. De Pascale, and P. Gori-Giorgi
Optimal-transport formulation of electronic density-functional theory
Phys. Rev. A 85, 062502 (2012)

[41] E. Räsänen, M. Seidl, and P. Gori-Giorgi
Strictly correlated uniform electron droplets
Phys. Rev. B 83, 195111 (2011)

[40] P. Gori-Giorgi and M. Seidl
Density functional theory for strongly-interacting electrons: Perspectives for Physics and Chemistry
Phys. Chem. Chem. Phys. 12, 14405 (2010) (invited article)

[39] M. Seidl and P. Gori-Giorgi
Adiabatic connection at negative coupling strengths
Phys. Rev. A 81, 012508 (2010)

[38] P. Gori-Giorgi, M. Seidl, and G. Vignale
Density functional theory for strongly interacting electrons
Phys. Rev. Lett., 103, 166402 (2009)
(highlighted with a **Synopsis in *Physics*** and as **Editor's suggestion**)

[37] P. Gori-Giorgi, J. G. Angyan, and A. Savin
Charge density reconstitution from approximate exchange-correlation holes
Can. J. Chem. 87, 1444 (2009) (invited article)

[36] P. Gori-Giorgi, G. Vignale, and M. Seidl
Electronic zero-point oscillations in the strong-interaction limit of density functional theory
J. Chem. Theory Comput. 5, 743 (2009)

[35] P. Gori-Giorgi and A. Savin
Study of the discontinuity of the exchange-correlation potential in an exactly soluble case
Int. J. Quantum Chem. 109, 2410 (2009) (invited article)

[34] P. Gori-Giorgi and A. Savin
Range separation combined with the Overhauser model: Application to the H_2 molecule along the dissociation curve
Int. J. Quantum Chem. 109, 1950 (2009) (invited article)

[33] P. Gori-Giorgi, M. Seidl and A. Savin
Intracule densities in the strong-interaction limit of density functional theory
Phys. Chem. Chem. Phys. 10, 3440 (2008) (invited article)

[32] P. Gori-Giorgi and A. Savin
Degeneracy and size consistency in electronic density functional theory
J. Phys.: Conf. Ser. 117, 012017 (2008) (invited article)

[31] P. Gori-Giorgi and A. Savin
The high-density limit of two-electron systems: Results from the extended Overhauser approach
J. Chem. Theory Comput. 3, 796 (2007)

[30] M. Seidl, P. Gori-Giorgi, and A. Savin
Strictly correlated electrons in density functional theory: A general formulation with applications to spherical densities
Phys. Rev. A 75, 042511 (2007)

[29] P. Gori-Giorgi and A. Savin
Kohn-Sham calculations combined with an average pair-density functional theory
Int. J. Mod. Phys. B 21, 2449 (2007) (invited article)

[28] P. Gori-Giorgi, J. Toulouse, and A. Savin
Model hamiltonians in density functional theory
in "High-dimensional Partial Differential Equations in Science and Engineering", CRM Proceedings & Lecture Notes 41, 117 (2007) (invited contribution)

[27] E. Goll, H.-J. Werner, H. Stoll, T. Leininger, P. Gori-Giorgi, and A. Savin
A short-range gradient-corrected spin density functional in combination with long-range coupled-cluster methods: Application to alkali-metal rare-gas dimers
Chem. Phys. 329, 276 (2006)

[26] S. Paziani, S. Moroni, P. Gori-Giorgi, and G.B. Bachelet
Local-spin-density functional for multideterminant density functional theory
Phys. Rev. B 73, 155111 (2006)

[25] P. Gori-Giorgi and A. Savin
Properties of short-range and long-range correlation energy density functionals from electron-electron coalescence
Phys. Rev. A 73, 032506 (2006)

[24] P. Gori-Giorgi and A. Savin
System-adapted correlation energy density functionals from effective pair interactions
Philos. Mag. 86, 2643 (2006)

[23] J. Toulouse, P. Gori-Giorgi, and A. Savin
Scaling relations, virial theorem and energy densities for long-range and short-range density functionals
Int. J. Quantum Chem. 106, 2026 (2006)

[22] P. Gori-Giorgi, S. Moroni, and G.B. Bachelet
Static ground-state properties of the 2D electron gas
in "Condensed Matter Theories Volume 20″ (Nova Publishers, 2006)

[21] J. Toulouse, P. Gori-Giorgi, and A. Savin
A short-range correlation energy density functional with multi-determinantal reference
Theor. Chem. Acc. 114, 305 (2005) (invited article)

[20] P. Gori-Giorgi and A. Savin
Simple model for the spherically- and system-averaged pair density: Results for two-electron atoms
Phys. Rev. A 71, 032513 (2005)

[19] L. Zecca, P. Gori-Giorgi, S. Moroni, and G.B. Bachelet

Local density functional for the short-range part of the electron-electron interaction
Phys. Rev. B 70, 205127 (2004)

[18] P. Gori-Giorgi, S. Moroni, and G.B. Bachelet
Pair-distribution functions of the two-dimensional electron gas
Phys. Rev. B 70, 115102 (2004)

[17] P. Gori-Giorgi and J.P. Perdew
Spin resolution of the electron-gas correlation energy: Positive same spin contributions
Phys. Rev. B 69, 041103(R) (2004) (**Rapid Communication**)

[16] M. Corona, P. Gori-Giorgi, and J.P. Perdew
Simple physical picture of the Overhauser screened electron-electron interaction
Phys. Rev. B 69, 045108 (2004)

[15] P. Gori-Giorgi, C. Attaccalite, S. Moroni, and G.B. Bachelet
Two-dimensional electron gas: correlation energy versus density and spin polarization
Int. J. Quantum Chem. 91, 126 (2003)

[14] P. Gori-Giorgi and P. Ziesche
Momentum distribution of the uniform electron gas: improved parametrization and exact limits of the cumulant expansion
Phys. Rev. B 66, 235116 (2002)

[13] P. Gori-Giorgi and J.P. Perdew
Pair correlation in the spin-polarized electron gas: A first-principles analytic model for all uniform densities
Phys. Rev. B 66, 165118 (2002)

[12] C. Attaccalite, S. Moroni, P. Gori-Giorgi, and G.B. Bachelet
Correlation energy and spin polarization in the 2D electron gas
Phys. Rev. Lett. 88, 256601 (2002)

[11] P. Gori-Giorgi
Uniform electron gas from two-particle wavefunctions
in "Electron Correlations and Materials Properties 2," edited by A. Gonis et al. (Kluwer/Plenum, New York, 2002)

[10] P. Gori-Giorgi, A. Federico, and G.B. Bachelet
Quantum Monte Carlo for realistic and model solids
in "Recent Advances in Quantum Monte Carlo methods – Part II", edited by W.A. Lester et al. (World Scientific, 2002)

[9] P. Gori-Giorgi and J.P. Perdew
Short-range correlation in the uniform electron gas: Extended Overhauser model
Phys. Rev. B 64, 155102 (2001)

[8] G.B. Bachelet, P. Gori-Giorgi, and F. Sacchetti
Model static structure factors and pair-correlation functions for the unpolarized homogeneous electron gas
in "Density Functional Theory and its Applications to Materials", edited by V. Van Doren et al. (AIP,2001)

[7] J. Tao, P. Gori-Giorgi, J.P. Perdew, and R. McWeeny
Uniform electron gas from the Colle-Salvetti functional: Missing long-range correlations
Phys. Rev. A 63, 32513 (2001)

[6] P. Gori-Giorgi, F. Sacchetti, and G.B. Bachelet
Correlation energy, pair-distribution functions and static structure factors of jellium
Physica A 280, 199 (2000)

[5] P. Gori-Giorgi, F. Sacchetti, and G.B. Bachelet
Analytic static structure factors and pair-correlation functions for the unpolarized homogeneous electron gas
Phys. Rev. B 61, 7353 (2000)

[4] F.A. Gianturco and P. Gori Giorgi
Radiative association rates and structure of resonances for Li and Li^+ colliding with H and H^+
Astrophys. J. 479, 560 (1997)

[3] F.A. Gianturco and P. Gori Giorgi
Radiative association of LiH from electronically excited lithium atoms
Phys. Rev. A 54, 4073 (1996)

[2] F.A. Gianturco, P. Gori Giorgi, H. Berriche and F.X. Gadea
Computed distributions of rotovibrational transitions in LiH and LiH^+
Astronomy and Astrophysics Suppl. Ser. 117, 377 (1996)

[1] P. Gori Giorgi
Influence of the angular response on Fourier absolute spectrometry: the case of COBE-FIRAS
Infrared Physics and Technology 36, 749 (1995)

OTHER PUBLICATIONS

[5] P. Gori Giorgi
Suggestions for a socially safer university
AdValvas 2020 (https://www.advalvas.vu.nl/en/opinie/removing-barriers-towards-socially-safer-university)

[4] P. Gori Giorgi and F. van der Woerd
We need to change how we run the VU
AdValvas 2019 (https://www.advalvas.vu.nl/opinie/we-need-change-how-we-run-vu)

[3] Y. Jansen, P. Gori Giorgi, and P. Benneworth
Een dure deken; waarom #woinactie?
ScienceGuide 2018 (https://www.scienceguide.nl/2018/09/een-dure-deken/)

[2] P. Gori Giorgi and F. Battaglia
A model for paralysis
AdValvas 2016 (https://www.advalvas.vu.nl/opinie/model-paralysis)

[1] P. Gori-Giorgi, T. Helgaker, G. Scuseria, B. Silvi, and J. Toulouse
Foreword for Special Issue in honour of Andreas Savin
Mol. Phys. 114, 909 (2016)

OTHER: INTERVIEWS IN THE DUTCH MEDIA ON THE PROBLEMS OF HIGHER EDUCATION
'De promovendus die tegen het zere been van de hoogleraar schopt, vliegt eruit' Trouw Mei 2019
https://www.trouw.nl/nieuws/de-promovendus-die-tegen-het-zere-been-van-de-hoogleraar-schopt-vliegt-eruit~befb2e71/

Ook de academici komen in actie tegen hoge werkdruk, Trouw December 2018
https://www.trouw.nl/nieuws/ook-de-academici-komen-in-actie-tegen-hoge-werkdruk~b3847ba7/

Van het ene naar het andere contract, NRC December 2018
https://www.nrc.nl/nieuws/2018/12/13/van-het-ene-naar-het-andere-contract-a3060578

Waarom hoogleraren en docenten vandaag een rood vierkantje dragen, NOS September 2018
https://nos.nl/op3/artikel/2248796-waarom-hoogleraren-en-docenten-vandaag-een-rood-vierkantje-dragen.html

TEACHING ACTIVITIES

2011 Dutch University Teaching Certification (BKO)

Mathematics in the Bachelor Chemistry (joint degree UvA-VU)

Since 2014 I have played a key role in redesigning, coordinating and teaching the mathematics of this joint degree. In particular, I have been asked to design a new compulsory course:

- Wiskunde voor Chemici III (3EC) 2018 – present [coordinator and lecturer]
  2nd year Bachelor Chemistry (joint degree UvA-VU): basic mathematics needed for quantum mechanics. This course has solved the long-standing difficulties of chemistry students with quantum mechanics and had very positive evaluations already in the first year I have taught it.

The course Wiskunde II, which the students follow in the 1st year, is since 2017 taught by dr. K. Giesbertz, UD in our group. This way, we carefully design together the two courses. On top of that, I have been teaching for several years an elective course

- Mathematics for Quantum Chemistry (6EC) 2014 – present [coordinator and lecturer]
  3rd year Bachelor Chemistry (joint degree UvA-VU): more advanced mathematical aspects of quantum chemistry.

Concept:
What made the students appreciate these Mathematics courses is both their content (carefully selected to cover the material they really need for quantum and physical chemistry, with several examples that connect concepts they have seen in previous courses with their mathematical aspects) and the methodology of teaching that I have designed. Each topic is treated in the following way:

- Explanation at the blackboard for 15-20 minutes
- Distribution of handouts containing
  - Key equations/concepts I have just explained
  - An exercise to do immediately
  - While they do the exercise, I walk in the class to identify problems/points that remained unclear
  - Back at the blackboard I address the problems and the unclear points I have observed
- Explain the next topic in the same way

Exercise classes are also scheduled, where more difficult exercises are treated. For the elective course I also use assignments that they have to hand in. This helps the students to keep the right pace during the course.

During the pandemic, I have switched to video clips for each topic. The videos have received extremely good evaluations from the students, and I will re-use them in a blended learning approach in future years.

Basic Physics in other programs

Since 2014, I have been coordinating and teaching basic physics courses in various programs at the VU. These courses are challenging because the students are not very interested in the subject. I have been experimenting with different ways to capture their interest, in particular by linking the concepts to the main topic of their studies and by using several online self-study platforms.

- Natuurkunde & Wiskunde voor Chemici I (6 EC) 2010 - 2012 [coordinator and lecturer]
  1st year Bachelor Chemistry: calculus and classical mechanics combined
- BasisNatuurkunde (3EC) 2015 – 2018 [coordinator and lecturer]
  1st year Bachelor Pharmaceutical Sciences: elements of classical mechanics and electromagnetism
- Fysica 1: Mechanica (3EC) 2018 – present [coordinator and lecturer]
  1st year Bachelor Science, Business and Innovation: elements of classical mechanics
- Fysica 1: Mechanica (3EC) 2018 – present [coordinator and lecturer]
  1st year Bachelor Medische Natuurwetenschappen: elements of classical mechanics

During the pandemic, I have used video clips where I carefully explain each topic and where I solve step by step sample exercises.

Quantum Mechanics in the Bachelor and Master Chemistry
I have been involved as lecturer in various Quantum Mechanics/Quantum Chemistry courses in both the Bachelor and the Master Chemistry. In the students' evaluations I have been always appreciated for my clear explanations of concepts that are very difficult for them. I have used also in these courses the same methodology of my Mathematics courses, combining explanations at the blackboard with handouts.

- Theoretische Chemie 1 & 2 (6 EC): 2011 [lecturer with L. Visscher]
  2nd year Bachelor Chemistry: introductory quantum mechanics and applications to atoms and molecules
- Moleculaire Quantummechanica (6EC): 2012 [lecturer with L. Visscher]
  2nd year Bachelor Chemistry: introductory quantum mechanics and applications to atoms and molecules
- Quantum Theory of Molecules and Matter (6EC): 2014 – 2018 [lecturer with W.J. Buma & H. Zhang]
  1st year Master Chemistry: quantum mechanics and applications from atoms to solids
- Understanding Quantum Chemistry (6EC): 2018 [lecturer with L. Visscher]
  1st year Master Chemistry: methods in quantum chemistry: Hartree-Fock, DFT, coupled clusters

Other lectures and courses in Physics programs

2001	Exercise classes Quantum Mechanics for Physics undergraduates, Tulane University, US
2002 – 2004	Lecturer for Solid State and Molecular Physics in the master ("Laurea") program in Physics – University of Rome "La Sapienza" (Italy)
2019	Guest lecturer (1 lecture on DFT) for the course Advanced numerical methods in many-body physics, Master Physics & Astronomy UvA (coordinator and lecturer: P. Corbez).

Lecturer in International Advanced Schools:

2017	*Virtual Winter School on Computational Chemistry* (https://winterschool.cc/)
2016	Lecturer at the school *Putting the theory back in Density Functional Theory*, IPAM, Los Angeles (USA)
2013	Lecturer at the doctorate Han-sur-Lesse Winter School in Theoretical Chemistry and Spectroscopy (Belgium)

Supervision of Bachelor and Master Projects
I have supervised several bachelor and master projects in Chemistry, Mathematics and Physics.

PhD juries

2008 – present	Opponent in more than 30 PhD defenses in the Netherlands, Europe, and US