

Claudio Dappiaggi - August 2021

Associate Professor
Dipartimento di Fisica
Università degli Studi di Pavia

Personal data

Name and surname: Claudio Dappiaggi

Spoken Languages: Italian, English (Excellent), French (good), German (good), Spanish (basic).

Education

Ph.D. in Physics (curriculum: mathematical physics), Università di Pavia, February 2004

Supervisor: Prof. Mauro Carfora (mauro.carfora@pv.infn.it)

Thesis: *Simplicial and asymptotical aspects of the holographic principle*

Degree in Physics, Università di Pavia, 24/03/2000 *Summa Cum Laude*

Supervisor: Prof. Mauro Carfora

Thesis: *Applicazioni del principio olografico in fisica gravitazionale* (transl. Applications of the holographic principle in gravitational physics)

Research and Academic Positions

- **Associate Professor in mathematical physics (MAT/07)** from 01/12/2019 at the Department of Physics of the University of Pavia (Italy)
- **Adjunct Professor/Researcher - Permanent Staff Member in mathematical physics (MAT/07)** from 29/12/2010 till 30/11/2019 at the Department of Physics of the University of Pavia (Italy)
- **Postdoc Fellow** from 01/04/2010 until 30/12/2010 at the II. Institut für Theoretische Physik - University of Hamburg
- **Junior Fellow** from 01/10/2009 (until 31/03/2010) at the Erwin Schrödinger Institute for Mathematical Physics - Wien
- **Humboldt Fellow** since 01/09/2007 (until 30/09/2009) at the II. Institut für Theoretische Physik - University of Hamburg
- **Research Contract** from 01/04/2007 to 31/05/2007: Dipartimento di Fisica - Università di Pavia
- **Research Contract** from 01/10/2006 to 31/12/2006: Dipartimento di Scienze e Tecnologia Avanzate - Università del Piemonte Orientale (project leader: Prof. Roberto Catenacci - e-mail:catenacc@unipmn.it)
- **Research Contract** from 01/08/2006 to 30/09/2006: Dipartimento di Fisica - Università di Pavia
- **Postdoc Grant** from 01/07/2004 to 31/07/2006: Dipartimento di Fisica - Università di Pavia
- **Visiting Ph.D.** from 01/01/2003 to 31/07/2003: Spinoza Institute - Utrecht University
- **Ph.D. Student** from 01/11/2000 to 15/02/2004: Dipartimento di Fisica - Università di Pavia

Longer Term Visits

Host: Professor Valter Moretti

11-25 Feb. 2005
Department of Mathematics - University of Trento

Host: Professor Martin Pörrmann

23-30 May 2009
Centre for Quantum Technologies - University of Durban (South Africa)

Host: Professor Thorsten Ohl

28 June - 02 July 2010
Institut für Theoretische Physik - Universität Würzburg

Host: Professor Felix Finster

17-22 Nov. 2014 and 11-22 May 2015
Department of Mathematics - University of Regensburg

Active Collaborations

I am collaborating on one or more projects with members of the following institutions:

- Department of Mathematics - UCL (University City London)
- Dipartimento di Matematica - Università di Trento
- Dipartimento di Matematica - Università di Genova
- Dipartimento di Matematica - Università di Roma Tor Vergata
- Dipartimento di Matematica - Università di Milano
- Departamento de Física Matemática - Universidad Nacional Autónoma de Mexico
- Department of Mathematics - University of Nottingham
- Department of Mathematics - Universität Regensburg

Awards, Honors and Funding

- **National qualification (Habilitation) for associate and for full professor in mathematical physics (01/A4), both renewed in 2018 .**
- FFARB (Finanziamento delle Attività Base della Ricerca) 2017
- Erasmus Plus Fellowship at the University of Regensburg in 2015.
- Member of the PRIN “Geometric and analytic theory of Hamiltonian systems in finite and infinite dimensions” (2013-2016) - national coordinator: Boris Dubrovin
- Member of the project “*Influenza della materia quantistica sulle fluttuazioni gravitazionali*” funded by the GNFM-Indam (National Group for Mathematical Physics) in 2013.
- Research responsible for the project “*Topological effects and construction of quantum field theories*” funded by the GNFM-Indam (National Group for Mathematical Physics) in 2012.
- Responsible for the project “Modern Trends in AQFT” financed by the DAAD (Deutscher Akademischer Austauschdienst) and by the “Ateneo Italo-Tedesco”,
- Member of the project “*Stati quantistici di Hadamard e radiazione di Hawking da buchi neri rotanti*” funded by the GNFM-Indam (National Group for Mathematical Physics) in 2010.
- *ESI Fellow* for the winter semester Oct.2009-Mar.2010,

- *Humboldt Fellow* from the 01st of October 2007 until the 30th of September 2009,
- *Sigrav Prize 2006* as “outstanding young researcher” awarded from the *Italian Society of Gravitational Physics*,
- Research responsible for the project “*Olografia e spazitempo asintoticamente piatti: un approccio rigoroso*” funded by the GNFM-Indam (National Group for Mathematical Physics) in 2007.

Books

1. Author with Valter Moretti and Nicola Pinamonti of *Hadamard States and the Bulk-to-Boundary Correspondence* – SpringerBriefs **25** Springer-Verlag (2017), arXiv:1706.09666 [math-ph]
2. Author and Editor together with Romeo Brunetti, Klaus Fredenhagen and Jakob Yngvason of *Advances in Algebraic Quantum Field Theory* – Springer-Verlag (2015)

Publication List – Peer reviewed and preprints

1. C. Dappiaggi, P. Rinaldi, F. Sclavi, “On a Microlocal Version of Young’s Product Theorem,” [arXiv:2104.12423 [math-ph]].
2. L. De Souza Campos, C. Dappiaggi and D. Sina, “On the role of boundary conditions within Hořava-Lifshitz gravity,” [arXiv:2103.15391 [hep-th]].
3. C. Dappiaggi and A. Marta, “Fundamental solutions and Hadamard states for a scalar field with arbitrary boundary conditions on an asymptotically AdS spacetimes,” *Math. Phys. Anal. & Geom.* **24** (2021), 28 [arXiv:2101.10290 [math-ph]]
4. L. de Souza Campos and C. Dappiaggi, “Ground and thermal states for the Klein-Gordon field on a massless hyperbolic black hole with applications to the anti-Hawking effect,” *Phys. Rev. D* **103** (2021) no.2, 025021 [arXiv:2011.03812 [hep-th]].
5. C. Dappiaggi, N. Drago, P. Rinaldi and L. Zambotti, “A Microlocal Approach to Renormalization in Stochastic PDEs,” [arXiv:2009.07640 [math-ph]], to appear on *Comm. Cont. Math.*
6. L. de Souza Campos and C. Dappiaggi, “Comments on the anti-Hawking effect on a BTZ black hole spacetime,” *Phys. Lett. B* **816** (2021), 136198 [arXiv:2009.07201 [hep-th]].
7. C. Dappiaggi and A. Marta, “A generalization of the propagation of singularities theorem on asymptotically anti-de Sitter spacetimes,” [arXiv:2006.00560 [math-ph]], to appear on *Math. Nach.*
8. M. Capoferri, C. Dappiaggi and N. Drago, “Global wave parametrices on globally hyperbolic spacetimes,” arXiv:2001.04164 [math.AP], *J. Math. Anal. Appl.* **490** (2020), 124316
9. C. Dappiaggi, G. Ruzzi and E. Vasselli, “Aharonov-Bohm superselection sectors,” arXiv:1912.05297 [math-ph], to appear on *Lett. Math. Phys.*
10. C. Dappiaggi, N. Drago and R. Longhi, “On Maxwell’s Equations on Globally Hyperbolic Spacetimes with Timelike Boundary,” arXiv:1908.09504 [math-ph], *Ann. Henri Poinc.* **21** (2020) 2367.
11. C. Dappiaggi, N. Drago and P. Rinaldi, “The algebra of Wick polynomials of a scalar field on a Riemannian manifold,” arXiv:1903.01258 [math-ph], *Rev. Math. Phys.* **32** (2020) no.08, 2050023
12. C. Dappiaggi, F. Finster, S. Murro and E. Radici, “The Fermionic Signature Operator in De Sitter Spacetime,” arXiv:1902.09144 [math-ph], *J. Math. Anal. Appl.* **485** (2020) 123808.
13. C. Dappiaggi, and F. Finster, “Linearized Fields for Causal Variational Principles: Existence Theory and Causal Structure,” arXiv:1811.10587 [math-ph], *Methods Appl. Anal.* **27** (2020), 1-56
14. M. Carfora, C. Dappiaggi, N. Drago and P. Rinaldi, “Ricci Flow from the Renormalization of Nonlinear Sigma Models in the Framework of Euclidean Algebraic Quantum Field Theory,” arXiv:1809.07652 [math-ph], *Commun. Math. Phys.* **374** (2019) no.1, 241
15. F. Bussola and C. Dappiaggi, “Tunnelling processes for Hadamard states through a 2+1 dimensional black hole and Hawking radiation,” arXiv:1806.00427 [gr-qc], *Class. Quant. Grav.* **36** (2019) no.1, 015020.

16. C. Dappiaggi, H. Ferreira and A. Marta, “Ground states of a Klein–Gordon field with Robin boundary conditions in global anti-de Sitter spacetime,” arXiv:1805.03135 [hep-th], Phys. Rev. D **98** (2018) no.2, 025005
17. C. Dappiaggi, N. Drago and H. R. C. Ferreira, “Fundamental solutions for the wave operator on static Lorentzian manifolds with timelike boundary,” arXiv:1804.03434 [math-ph], Lett. Math. Phys. **109** (2019) no.10 2157
18. C. Dappiaggi, H. R. C. Ferreira and B. A. Juárez-Aubry, “Mode solutions for a Klein-Gordon field in anti-de Sitter with dynamical boundary conditions of Wentzell type,” arXiv:1802.00283 [hep-th], Phys. Rev. D **97** (2018) no.8, 085022
19. M. Benini, C. Dappiaggi and A. Schenkel, “Algebraic quantum field theory on spacetimes with timelike boundary,” arXiv:1712.06686 [math-ph], Annales Henri Poincaré **19** (2018) no.8, 2401
20. C. Dappiaggi, H. R. C. Ferreira and C. A. R. Herdeiro, “Superradiance in the BTZ black hole with Robin boundary conditions,” arXiv:1710.08039 [gr-qc], Phys. Lett. B **778** (2018) 146.
21. F. Bussola, C. Dappiaggi, H. R. C. Ferreira and I. Khavkine, “Ground state for a massive scalar field in BTZ spacetime with Robin boundary conditions,” arXiv:1708.00271 [gr-qc], Phys. Rev. D **96** (2017) no.10, 105016.
22. G. Canepa, C. Dappiaggi and I. Khavkine, “IDEAL characterization of isometry classes of FLRW and inflationary spacetimes,” arXiv:1704.05542 [gr-qc], Class. Quantum Grav. **35** (2018) 035013.
23. C. Dappiaggi and H. R. C. Ferreira, “On the algebraic quantization of a massive scalar field in anti-de-Sitter spacetime,” arXiv:1701.07215 [math-ph], Rev. Math. Phys. **30** (2018) 1850004.
24. C. Dappiaggi, S. Murro and A. Schenkel, “Non-existence of natural states for Abelian Chern-Simons theory,” arXiv:1612.04080 [math-ph], J. Geom. Phys. **116** (2017) 119.
25. M. Benini, M. Capoferri and C. Dappiaggi, “Hadamard states for quantum Abelian duality,” arXiv:1611.10282 [math-ph], Annales Henri Poincaré **18** (2017) no.10, 3325
26. C. Dappiaggi and H. R. C. Ferreira, “Hadamard states for a scalar field in anti-de Sitter spacetime with arbitrary boundary conditions,” arXiv:1610.01049 [gr-qc], Phys. Rev. D **94** (2016) no.12, 125016
27. C. Dappiaggi, H. Gimperlein, S. Murro and A. Schenkel, “Wavefront sets and polarizations on supermanifolds,” arXiv:1512.07823 [math-ph], J. Math. Phys. **58** (2017) no.2, 023504
28. C. Dappiaggi, N. Drago, “A new deformation argument for Hadamard states via an extended Møller operator,” arXiv:1506.09122 [math-ph], Lett. Math. Phys. **106** (2016) no.11, 1587
29. M. Benini and C. Dappiaggi, “Models of free quantum field theories on curved backgrounds” in *Advances in Algebraic Quantum Field Theory*, Springer-Verlag (2015), arXiv:1505.04298
30. C. Dappiaggi “Hadamard States from null Infinity” – invited contribution to *Mathematical Quantum Physics*, published by Birkhäuser Basel, arXiv:1501.04808 [math-ph].
31. C. Dappiaggi, G. Nosari and N. Pinamonti, “The Casimir effect from the point of view of algebraic quantum field theory”, Math. Phys. Anal. Geom. **19** (2016), 1, arXiv:1412.1409 [math-ph].
32. C. Dappiaggi and A. Melati, “Curvature fluctuations on asymptotically de Sitter spacetimes via the semiclassical Einstein’s equations,” arXiv:1406.2223 [gr-qc], Class. Quant. Grav. **31** (2014) 235006.
33. M. Benini, C. Dappiaggi and S. Murro, “Radiative observables for linearized gravity on asymptotically flat spacetimes and their boundary induced states,” arXiv:1404.4551 [gr-qc], J. Math. Phys. **55** (2014) 082301.
34. M. Benini, C. Dappiaggi, T. -P. Hack and A. Schenkel, “A C*-algebra for quantized principal U(1)-connections on globally hyperbolic Lorentzian manifolds,” arXiv:1307.3052 [math-ph], Comm. Math. Phys. **332** (2014) 477.
35. M. Benini, C. Dappiaggi and T. -P. Hack, “Quantum Field Theory on Curved Backgrounds – A Primer,” Int. Jour. Mod. Phys. A **28** (2013) 1330023, arXiv:1306.0527 [gr-qc], invited review.

36. M. Benini, C. Dappiaggi and A. Schenkel, “Quantized Abelian principal connections on Lorentzian manifolds,” arXiv:1303.2515 [math-ph], *Comm. Math. Phys.* **330** (2014) 123.
37. K. Sanders, C. Dappiaggi and T. -P. Hack, “Electromagnetism, local covariance, the Aharonov-Bohm effect and Gauss’ law,” arXiv:1211.6420 [math-ph], *Comm. Math. Phys.* **328** (2014) 625.
38. M. Benini, C. Dappiaggi and A. Schenkel, “Quantum field theory on affine bundles,” arXiv:1210.3457 [math-ph], *Ann. Henri Poinc.* **15** (2014) 171.
39. C. Dappiaggi, D. Siemssen, “Hadamard States for the Vector Potential on Asymptotically Flat Spacetimes,” *Rev. Math. Phys.* **25** (2013) 1350002, arXiv:1106.5575 [gr-qc].
40. C. Dappiaggi, B. Lang, “Quantization of Maxwell’s equations on curved backgrounds and general local covariance,” *Lett. Math. Phys.* **101** (2012) 265, arXiv:1104.1374 [gr-qc].
41. C. Dappiaggi “Remarks on the Reeh-Schlieder property for higher spin free fields on curved spacetimes,” *Rev. Math. Phys.* **23** (2011) 1035, arXiv:1102.5270 [math-ph].
42. C. Dappiaggi, T. -P. Hack, N. Pinamonti, “Approximate KMS states for scalar and spinor fields in Friedmann-Robertson-Walker spacetimes,” *Ann. Henri Poinc.* **12** (2011) 1449, arXiv:1009.5179 [gr-qc].
43. C. Dappiaggi, T. P. Hack, J. Moller and N. Pinamonti, “Dark Energy from Quantum Matter,” arXiv:1007.5009 [astro-ph.CO].
44. C. Dappiaggi, G. Lechner and E. Morfa-Morales, “Deformations of quantum field theories on spacetimes with Killing vector fields,” *Comm. Math. Phys.* **305** (2011) 99, arXiv:1006.3548 [math-ph].
45. C. Dappiaggi, N. Pinamonti and M. Porrmann, “Local causal structures, Hadamard states and the principle of local covariance in quantum field theory,” *Comm. Math. Phys.* **304** (2011) 459, arXiv:1001.0858 [hep-th].
46. C. Dappiaggi, V. Moretti and N. Pinamonti, “Rigorous construction and Hadamard property of the Unruh state in Schwarzschild spacetime,” arXiv:0907.1034 [gr-qc], *Adv. Theo. Math. Phys.* **15** (2011) 355.
47. C. Dappiaggi, T. Hack and N. Pinamonti, “Remarks on the conformal anomaly for Dirac fields,” *Rev. Math. Phys.* **21** (2009) 1241, arXiv:0904.0612 [math-ph].
48. C. Dappiaggi, V. Moretti and N. Pinamonti, “Distinguished quantum states in a class of cosmological spacetimes and their Hadamard property,” *J. Math. Phys.* **50**, 062304 (2009), arXiv:0812.4033 [gr-qc].
49. C. Dappiaggi, V. Moretti and N. Pinamonti, “Cosmological horizons and reconstruction of quantum field theories,” *Comm. Math. Phys.* **285** (2009) 1129, arXiv:0712.1770 [gr-qc].
50. C. Dappiaggi, K. Fredenhagen and N. Pinamonti, “Stable cosmological models driven by a free quantum scalar field,” *Phys. Rev. D* **77** (2008) 104015, arXiv:0801.2850 [gr-qc].
51. C. Dappiaggi, “On the Lagrangian and Hamiltonian formulation of a scalar free field theory at null infinity,” *Rev. Math. Phys.* **20** (2008) 801, arXiv:math-ph/0607055.
52. C. Dappiaggi, “Projecting massive scalar fields to null infinity,” *Ann. Henri. Poinc.* **9** (2008) 35, arXiv:0705.0284 [gr-qc].
53. M. Carfora, C. Dappiaggi and V. L. Gili, “Boundary Conformal Field Theory and Ribbon Graphs: a tool for open/closed string dualities,” *JHEP* **07** (2007) 21 arXiv:0705.2331 [hep-th].
54. M. Carfora, C. Dappiaggi and V. L. Gili, “Triangulated surfaces in twistor space: A kinematical set up for open / closed string duality,” *JHEP* **12**(2006) 17 [arXiv:hep-th/0607146].
55. C. Dappiaggi, V. Moretti and N. Pinamonti, “Rigorous steps towards holography in asymptotically flat spacetimes,” *Rev. Math. Phys.* **18** (2006) 349 [arXiv:gr-qc/0506069].
56. B. Bertotti, R. Catenacci and C. Dappiaggi, “The legacy of pseudospheres: from geometry to physics” *Riv. Nuovo Cimento* **29** (2006) 1.

57. C. Dappiaggi and S. Raschi, “*Spectroscopy of an AdS Reissner-Nordstroem black hole,*” *Int. J. Mod. Phys. D* **15** (2006) 439 [arXiv:gr-qc/0507015].
58. B. Bertotti, R. Catenacci and C. Dappiaggi, “*Pseudospheres in geometry and physics: From Beltrami to de Sitter and beyond,*” *Rend. Ist. Lombardo A Sci.Mat.Fis.Chim.Geol.* **39** (2007) 165 arXiv:math.ho/0506395.
59. C. Dappiaggi, “*Elementary particles, holography and the BMS group,*” *Phys. Lett. B* **615** (2005) 291 [arXiv:hep-th/0412142].
60. C. Dappiaggi, “*BMS field theory and holography in asymptotically flat space-times,*” *JHEP* **0411** (2004) 011 [arXiv:hep-th/0410026].
61. G. Arcioni and C. Dappiaggi, “*Holography in asymptotically flat space-times and the BMS group,*” *Class. Quant. Grav.* **21** (2004) 5655 [arXiv:hep-th/0312186].
62. M. Carfora, C. Dappiaggi and A. Marzuoli, “*The conformal geometry of random Regge triangulations,*” published in ‘Advances in General Relativity and Cosmology’, Giorgio Ferrarese (Ed.) arXiv:gr-qc/0310039.
63. G. Arcioni and C. Dappiaggi, “*Exploring the holographic principle in asymptotically flat spacetimes via the BMS group,*” *Nucl. Phys. B* **674** (2003) 553 [arXiv:hep-th/0306142].
64. G. Arcioni, M. Carfora, C. Dappiaggi and A. Marzuoli, “*The WZW model on random Regge triangulations,*” *J. Geom. Phys.* **52** (2004) 137 [arXiv:hep-th/0209031].
65. M. Carfora, C. Dappiaggi and A. Marzuoli, “*The modular geometry of random Regge triangulations,*” *Class. Quant. Grav.* **19** (2002) 5195 [arXiv:gr-qc/0206077].

Conference proceedings

1. C. Dappiaggi “*An overview on algebraic quantum field theory*” Proceedings of the Humboldt Kolleg, held in Corfu (September 2015), PoS CORFU **2015** (2016) 098.
2. V. L. Gili, M. Carfora and C. Dappiaggi, “*BCFT and Ribbon Graphs as tools for open/closed string dualities,*” arXiv:0710.5899 [hep-th] in the Proceedings of the 7th International Workshop Lie Theory and Its Applications in Physics held in Varna (Bulgaria) 18-24 (June 2007) - *Bulg. J. Phys.* **35** (2008) 107.
3. C. Dappiaggi “*Holography in asymptotically flat spacetimes: recent results and perspectives*” Proceedings of the XVII Sigrav Meeting held in Turin 4-7 September 2006 available at <http://www.sigrav.org/Private/Procs.it.php>.
4. C. Dappiaggi, “*Can we implement the holographic principle in asymptotically flat spacetimes?,*” Proceeding of the IV International Symposium on “*Quantum Theory and Symmetries*” Heron Press (2006) ed. V.K. Dobrev arXiv:hep-th/0511020.
5. C. Dappiaggi, “*BMS field theory and the open roads,*” *J. Phys. Conf. Ser.* **33** (2006) 254.
6. M. Carfora, C. Dappiaggi and V. Gili, “*Simplicial aspects of string dualities,*” *AIP Conf. Proc.* **751** (2005) 182 [arXiv:hep-th/0410006].
7. G. Arcioni and C. Dappiaggi, “*Holography and BMS field theory,*” *AIP Conf. Proc.* **751** (2005) 176 [arXiv:hep-th/0409313].

Other E-prints

1. C. Dappiaggi, “*Simplicial and asymptotical aspects of the holographic principle,*” arXiv:gr-qc/0403072. (Ph.D. thesis)

Invited Talks

- 01/03/2021 - QFG Seminar Series - Université de Cergy-Pontoise – “A Microlocal Approach to Renormalization in Stochastic PDEs”
- 03/07/2020 - Joint Mathematical Physics Colloquium Munich-Regensburg – “Boundary conditions for Maxwell equations on globally hyperbolic spacetimes with timelike boundary”
- 29/06/2020 - Institute of Physics, University of Leipzig – “On the construction of global wave parametrices on globally hyperbolic spacetimes”
- 06/12/2019 - Invited Speaker at the conference “Operator Algebras in Quantum Field Theory and Quantum Probability” – University of Rome Tor Vergata – “The derivation of the Ricci Flow from non linear Sigma models in algebraic quantum field theory”
- 18-22/11/2019 - Minicourse on “Algebraic Quantum Field Theory and Ricci Flow” – Department of Mathematics - University of Potsdam
- 25/06/2019 - Department of Mathematics - University of Nottingham - “The derivation of the Ricci Flow from non linear Sigma models in algebraic quantum field theory”
- 31/05/2019 - MITP Programme “The Mysterious Universe- Dark Matter-Dark Energy-Cosmic Magnetic Fields” (Mainz)
- 18/03/2019 - Invited Speaker at the DPG Tagung (Munich) in the Mathematical Physics Section - “The derivation of the Ricci Flow from non linear Sigma models in algebraic quantum field theory”
- 22/06/2018 - Department of Mathematics University of Regensburg – “Fundamental Solutions for the wave operator on static Lorentzian spacetimes with timelike boundary”
- 25/05/2018 - Quantum fields, scattering and spacetime horizons: mathematical challenges (Les Houches) – “On the role of boundary conditions in the quantization of free field theories”
- 27/03/2018 - Problemi attuali di fisica teorica (Vietri sul Mare) - “On the role of boundary conditions in the quantization of scalar fields in AdS spacetime”
- 02/03/2018 - DISAT - Politecnico di Torino “On the role of boundary conditions in the quantization of scalar fields in AdS spacetime”
- 29/01/2018 - Department of Mathematics - University of Freiburg “Hadamard States for quantum Abelian duality”
- 06/09/2017 - Department of Mathematics - University of York, - Workshop *Modern Mathematics of Quantum Theory* – “On the algebraic quantization of a massive scalar field theory in AdS spacetime”
- 31/08/2017 - Department of Mathematics - University of Nottingham – “On the algebraic quantization of a massive scalar field theory in AdS spacetime”
- 27/07/2017 - Department of Mathematics University of Regensburg – “On the construction of the ground state for a massive scalar field theory in AdS spacetime”
- 13/04/2017 - Department of Mathematics - Workshop *QFT Day in Milan: mathematical aspects of renormalization*, University of Milan – “On the construction of the Green operators and of the ground state for a massive scalar field theory in AdS”
- 02/12/2016 - Department of Mathematics - University of Trento – “On the construction of the Green operators and of the ground state for a massive scalar field theory in AdS”
- 03/11/2016 - Department of Mathematics - University of Potsdam – “On the construction of the Green operators and of the ground state for a massive scalar field theory in AdS”
- 25/09/2015 - Algebraic Quantum Field Theory on Lorentzian Manifolds - Minisymposium at the Deutsche Mathematiker-Vereinigung (Hamburg) - “A novel deformation argument for Hadamard state via an extended Møller operator”
- 20/09/2015 - Workshop “Open problems in theoretical physics: the issue of quantum space-time” (Corfu - Greece) - “An overview on algebraic quantum field theory on curved spacetimes”

- 09/09/2015 - Programme “Modern Theory of Wave equations” (ESI - Vienna) - “*A novel deformation argument for Hadamard state via an extended Møller operator*”
- 20/07/2015 - Conference “Operator Algebras and Quantum Physics” (Sao Paolo (Brazil) - ICMP Satellite Meeting) - “*A novel deformation argument for Hadamard state via an extended Møller operator*”
- 14/07/2015 - Marcel Grossman meeting (Rome - La Sapienza) - “*A novel deformation argument for Hadamard state via an extended Møller operator*”
- 31/03/2015 - Workshop “Problemi attuali di fisica teorica” (Vietri sul Mare) - “*Remarks on the Casimir effect from the point of view of algebraic quantum field theory*”
- 11/02/2015 - Conference “New trends in Algebraic Quantum Field Theory” - “*Curvature Fluctuations in Asymptotically de Sitter Spacetimes*”
- 21/11/2014 - Oberseminar Analysis at the Department of Mathematics - University of Regensburg
- 20/11/2014 - Colloquium at the Department of Mathematics - University of Regensburg
- 30/10/2014 - Department of Mathematics - University of Milan - “*The Casimir effect from the point of view of algebraic quantum field theory*”
- 29/09/2014 - Conference “Quantum Mathematical Physics” (Regensburg) - “*On the construction of Hadamard states from null infinity*”
- 15/09/2014 - Meeting “Operator and Geometric Analysis on Quantum Theory” (Trento) - “*Remarks on the Casimir effect from the point of view of algebraic quantum field theory*”
- 03/07/2014 - Conference “Asymptotic Analysis in General Relativity” (Grenoble) - “*On the role of asymptotic structures in the construction of quantum states*”
- 25/10/2013 PRIN meeting - Università di Roma 3 - “*On the phase space of Maxwell’s equations*”
- 22/07/2013 Conference “New Crossroads between Mathematics and Quantum Field Theory” - MFO (Oberwolfach) - “*Hadamard states from null boundaries*”
- 22-26/04/2013 Conference “Variational and spectral methods in Quantum Field Theory” - IHP (Paris) - “*The principle of general local covariance and the quantization of electromagnetism*”
- 06/02/2013 Workshop “Nonlinear waves and integrable systems 2013” - Sissa (Trieste) - “*Hyperbolic PDEs and algebraic quantum field theory*”
- 16/11/2012 Workshop “Perspectives of Fundamental Cosmology” - Nordita (Stockholm) - “*Quantum field theory on curved backgrounds and Hadamard states*”
- 16/11/2012 Workshop “Perspectives of Fundamental Cosmology” - Nordita (Stockholm) - “*Stable cosmological models and the semiclassical Einstein’s equations*”
- 26-28/09/2012 Workshop “Algebraic Quantum Field Theory and local symmetries” - Hausdorff Research Center for Mathematics (Bonn) - “*New insights the quantization of Maxwell’s equations on curved backgrounds*”
- 12/09/2012 Workshop “New Trends in Algebraic Quantum Field Theory” - Center for Mathematical Physics (Frascati - Rome) - “*New insights the quantization of Maxwell’s equations on curved backgrounds*”
- 13/04/2012 Convegno di Fisica Matematica in onore di Roberto Catenacci - University of Piemonte Orientale (Alessandria): “*The Bertotti-Robinson Universe and the quantization of Maxwell’s equations on curved backgrounds*”
- 26/09/2011 Workshop “Rigorous Quantum Field Theory in the LHC Era” - Erwin Schrödinger Institute (Vienna): “*On the quantization of Maxwell’s equations on curved backgrounds*”
- 05/07/2011 University of Hamburg: “*The surprises of the quantization of Maxwell’s equations on curved backgrounds*”
- 26/05/2011 University of Genova: “*On higher spin fields and their quantization on curved backgrounds*”

- 24/05/2011 Workshop "Noncommutativity and Physics: Spacetime Quantum Geometry" - Bayrischzell (Germany) "*Deformation of quantum field theories and curved backgrounds*"
- 21/02/2011 University of Utrecht: "*On the Contribution of Free Fields to Λ CDM*"
- 24/08/2010 Workshop "Quantum Field Theory on Curved Spacetime - From the Algebraic Approach to Local Covariance" (Durban): "*Local causal structures, local Hadamard states and local covariance*"
- 28/06-02/07/2010 University of Würzburg: course on "*Introduction to quantum field theory on curved backgrounds*"
- 12/05/2010 University of Hamburg: "*From local causal structures to Hadamard states*"
- 29/03/2010 Workshop "Problemi attuali di fisica teorica" - (Vietri sul Mare): "*Beyond the event horizon: the Hadamard property of the Unruh state*"
- 25/03/2010 Workshop "Quantum Field Theory on curved spacetimes" - (ESI, Vienna): "*Beyond the event horizon: the Hadamard property of the Unruh state*"
- 29-30/01/2010 University of Leipzig: speaker in the Mitteldeutsche Physik Combo, giving a course entitled: "*Introduction to Quantum Field Theory on curved Backgrounds with the algebraic formalism - part II*"
- 26/01/2010 University of Vienna: "*Examples and explicit construction of Hadamard states*", final lecture of the course "Quantum field theory over curved backgrounds"
- 13/01/2010 University of Hamburg: "*Peeking through the horizon: the Hadamard property of the Unruh state*"
- 08-09/01/2010 University of Jena: speaker in the Mitteldeutsche Physik Combo, giving a course entitled: "*Introduction to Quantum Field Theory on curved Backgrounds with the algebraic formalism - part I*"
- 03/12/2009 University of Vienna: "*An application of semiclassical Einstein's equations in cosmology*"
- 24-25/06/2009 University of Leipzig: mini-course "*On the role of asymptotic structures in quantum field theory over curved backgrounds*"
- 29/05/2009 University of Durban: "*Distinguished quantum ground state in Friedmann-Robertson-Walker spacetimes*"
- 27/05/2009 University of Durban: "*From semiclassical Einstein's equations to cosmology*"
- 23/04/2009 SFB Colloquium (Hamburg): "*Algebraic quantum field theory meets cosmology*"
- 03/03/2009 SFB Meeting (Bergedorf): "*Algebraic quantum field theory meets cosmology*"
- 23/02/2009 University of Pavia: "*Quantum field theory over curved backgrounds and cosmology*"
- 14/01/2009 University of Hamburg: "*Distinguished ground states in cosmological spacetimes*"
- 27/05/2008 Department of Mathematics - York University: "*Mathematical aspects of the holographic principle*"
- 11/01/2008: Courant Center - Universität Göttingen: "*Formal Aspects of the Holographic Principle in Asymptotically Flat Spacetimes*"
- 24/10/2007 University of Hamburg: "*The road to holography in asymptotically flat spacetimes*"
- 10/05/2007 Department of Mathematics - Heriot Watt University (Edinburgh): "*The holographic principle and asymptotically flat spacetimes*"
- 28/11/2006 Department of Advanced Sciences and Technologies - Università del Piemonte Orientale (Alessandria) "*Holography and asymptotically flat spacetimes: results and perspectives*".
- 04/09/2006 Sigrav Meeting (Turin) - "*Exploring holography in asymptotically flat spacetimes via the BMS group*"

- 11/05/2006 Department of Physics - Università di Como “*The holographic principle in asymptotically flat spacetimes: new results and perspectives,*”
- 6/04/2006 Assemblée Nazionale GNFM: “*Quantum field theory and holography on the null boundary of an asymptotically flat spacetime*”
- 14/08/2005 QTS-4 Conference held in Varna: “*The neverending quest of holography in asymptotically flat space-times*”
- 28/01/2005 Department of Physics - Università di Trento “*The Quest for holography in asymptotically flat spacetimes*”

Contributed Talks

- 27 July 2018: XIX International Congress in Mathematical Physics (Montréal) “*On the canonical commutation relations for the wave operator on static Lorentzian manifolds with timelike boundary*”
- 09 July 2013: 20th International Conference on General Relativity and Gravitation - Warsaw: “*On the algebraic quantization of Abelian gauge theories on curved spacetimes*”
- 01 June 2013: 32nd Workshop on Foundation and Constructive Aspects of QFT - Wuppertal: “*The principle of general local covariance and the quantization of Abelian gauge theories*”
- 08 August 2012: XVII International Congress in Mathematical Physics (Aahrus) “*New insights the quantization of Maxwell’s equations on curved backgrounds*”
- 05 August 2009: XVI International Congress in Mathematical Physics (Prague) “*Studying the back-reaction of quantum scalar fields in a cosmological scenario*”
- 12 March 2009: DPG Tagung - München “*A novel point of view on the conformal anomaly of quantised Dirac fields*”
- 27 June 2008: 40th Symposium on Mathematical Physics - Torun: “*Cosmological Horizons and Reconstruction of Quantum Field Theories*”
- 07 June 2008: 22nd Workshop on Foundation and Constructive Aspects of QFT - Hamburg: “*Cosmological Horizons and Reconstruction of Quantum Field Theories*”
- 30 June 2007: 20th Workshop on Foundation and Constructive Aspects of QFT - Leipzig: “*Projecting massive scalar fields on null infinity: a step towards an holographic description*”
- 10 Dec. 2005: 17th Workshop on Foundation and Constructive Aspects of QFT - Göttingen: “*Aspects of Holography in Asymptotically Flat Spacetimes and the BMS Group*”
- Sep.2005 Constr. Dyn. and Quant. Grav. Conference - Cala Gonone: “*The neverending quest of holography in asymptotically flat space-times*”
- 21 March 2005 Problemi Attuali di Fisica Teorica - Vietri sul Mare: “*The neverending quest of holography in asymptotically flat space-times*”
- Sep. 2004 XVI SIGRAV - Vietri Sul Mare: “*Aspects of Holography in Asymptotically Flat Spacetime and the BMS Group*”
- July 2004 GR17 - (Dublin): “*Holography in asymptotically flat space-times and the BMS group*”
- April 2004 Problemi Attuali di Fisica Teorica - Vietri Sul Mare: “*Holography in asymptotically flat space-times and the BMS group*”
- March 2004 319th Heraeus Seminar - Mathematical Relativity held in Bad-Honnef: “*Exploring the holographic principle in flat space-times via the BMS group*”
- Feb. 2003 Spinoza Institute - Utrecht: “*Modular properties of Random Regge Triangulations*”

Editorial board

- Editor for *Advances in Mathematical Physics* – Hindawi
- Editor for *Geometric Flows* – De Gruyter - till 2020
- Review editor for *Frontiers in mathematical physics* - till 2016

Referee for international research projects

- Referee for the CONICYT projects - Comisión Nacional de Investigación Científica y Tecnológica (Chile)
- Referee for the PCE projects - Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding
- Referee for the Cariplo projects - Cariplo Foundation
- Referee for the SIR projects - MIUR (Italian ministry for research and university)
- Referee for the DFG (German Research Foundation)

Referee and Reviewer - peer reviewed journals

- Journal of Mathematical Analysis and Applications
- Annales scientifiques de l'École normale supérieure
- The European Physical Journal Plus
- Journal of Geometry and Physics
- Europhysics Letters
- Publications of the Research Institute for Mathematical Sciences
- Reports in Mathematical Physics
- JHEP
- Entropy
- International Journal of Geometric Methods in Modern Physics
- Proceedings of the Royal Society - Series A
- Journal of Differential Geometry
- Letters in mathematical physics
- Communications in mathematical physics
- Canadian Journal of Physics
- Frontiers in mathematical physics
- European Physical Journal C
- The Hadronic Journal
- Foundations of Physics
- Reviews in Mathematical Physics
- SIGMA
- Journal of Mathematical Physics
- Journal of Physics A
- Annales Henri Poincaré
- Physical Review Letters
- Physical Review D
- Classical and Quantum Gravity

- General Relativity and Gravitation
- Reviewer for Mathematical Reviews - American Mathematical Society – till 2015

Ph.D. Students

- Federico Sclavi - 10/2019-10/2022
- Lissa Campos - 10/2018-10/2021
- Paolo Rinaldi - 10/2018-10/2021
- Alessio Marta (cosupervisor at the University of Milan) - 10/2018-10/2021 (supervisor Prof. Livio Pizzocchero)
- Francesco Bussola - 10/2015-01/2019 - “*On the quantization of Bosonic free field theories on BTZ spacetime*”
- Simone Murro - 05/2014 - 04/2017 - “*Quantum States on the algebra of observables for Dirac fields*” – Co-supervisor at the University of Regensburg (supervisor: Prof. Felix Finster)
- Samuel Rutili - 10/2013-10/2017 - Project on “*Thermal states on curved backgrounds for interacting quantum field theories*” – withdrawn from the PhD programme.
- Gabriele Nosari - 10/2013 - 02/2017 - Project on “*On the algebraic approach to the dynamical Casimir effect*”
- Marco Benini - 10/2011 - 01/2015 - “*Locality in Abelian gauge theories over globally hyperbolic spacetimes*” (excellent)

Laurea Thesis Supervisor and Co-supervisor

- September 2021 - BSc - Paolo Besana (University of Pavia) – in preparation
- September 2021 - BSc - Beatrice Costeri (University of Pavia) – in preparation
- September 2021 - MSc - Marco Mastronicola (University of Pavia) – in preparation
- September 2021 - MSc - Alberto Bonicelli (University of Pavia) – in preparation
- September 2021 - MSc - Luca Sinibaldi (University of Pavia) – in preparation
- September 2021 - MSc - Federico Comandulli (University of Pavia) – in preparation
- September 2021 - MSc - Diego Salvi (University of Pavia) – in preparation
- March 2021 - MSc - Denis Sina (University of Pavia) – “Ground States of a real Klein-Gordon Field with Robin Boundary Conditions in Lif_2 spacetimes” (full marks and honours)
- February 2021 - MSc - Bruno Micciola (University of Parma) – “Stati di energia minima su spazio-tempo di Robertson-Walker” – (106/110, co-supervisor, supervisor: Prof. Luca Griguolo)
- November 2020 - BSc - Filippo Nava (University of Pavia) – “Costruzione della Misura Spettrale della Combinazione Lineare di due Osservabili Non Commutanti” (109/110)
- October 2020 - BSc - Filippo Capobianco (University of Pavia) – “Un’introduzione alla fluidodinamica e alla teoria degli strati limite” (full marks and honours)
- October 2020 - MSc - Giorgio Musante (University of Pavia) – “On the complex of observables for linearized gravity” (full marks and honours)
- October 2020 - MSc - Mattia Lacchini (University of Pavia) – “Edge modes and boundary conditions in gauge field theory” (full marks and honours)
- September 2020 - Iuss - Stefan-Nicolae Paicu (University of Pavia) – “Nonlinear Schrödinger equation and its applications” 100/100
- September 2020 - BSc - Gaia Andreani (University of Pavia) – “Limite termodinamico e transizioni di fase del primo ordine nei sistemi reticolari” (full marks and honours)

- September 2020 - BSc - Nicoló Nuca (University of Pavia) – “Processi di diffusione ed equazione di Fokker-Planck” 106/110
- July 2020 - BSc - Cecilia Fruet (University of Pavia) – “Mathematical Methods for Image Reconstruction: the Radon Transform” (full marks and honours)
- May 2020 - IUSS - Matteo Ferrari (University of Pavia) – “Calcolo Stocastico” (full marks)
- April 2020 - MSc - Alessandro Monteverdi (University of Pavia) – “On the renormalized stress energy tensor for a massless conformally coupled scalar field in BTZ” (109/110)
- September 2019 - BSc - Giovanni Bassi (University of Pavia) – “The logic of quantum mechanics” (100/110)
- September 2019 - BSc - Giovanni Mazzolari (University of Pavia) – “Mathematical formulation of Magnetohydrodynamics and its application to the solar wind” (full marks and honours)
- September 2019 - BSc - Matteo Ferrari – “Integrali di Feynman sui cammini e loro formalizzazione matematica” (full marks and honours)
- September 2019 - BSc - Federico Comandulli (University of Pavia) – “The formulation of Quantum Mechanics and the role of Gleason’s Theorem” (109/110)
- September 2019 - BSc - Alberto Bonicelli (University of Pavia) – “Geodesic motion on Riemannian manifolds from heat kernel techniques” (full marks and honours)
- September 2019 - BSc - Marco Mastronicola (University of Pavia) – “A rigorous introduction to ergodic theory” (108/110)
- September 2019 - MSc - Amodio Carleo (University of Pavia) – “Gravitational Wave Background from Cosmological Phase Transitions in a Gauge Extension of the Standard Model” with Pedro Schwaller – U. Mainz (full marks and honours)
- September 2019 - MSc - Rubens Longhi (University of Pavia) – “On the role of boundary conditions in the construction of fundamental solutions for Maxwell’s equations on spacetimes with timelike boundary” (full marks and honours)
- May 2019 - IUSS - Paolo Rinaldi (University of Pavia) – “Diffusive Processes from an Algebraic Quantum Field Theory Viewpoint” (full marks)
- April 2019 - BSc - Giuseppe Auricchio (University of Pavia) – “Sistemi Hamiltoniani Vincolati e Teoria di Gauge” (108/110)
- October 2018 - MSc - Marcello Lanfranchi (University of Pavia) - “An operadic approach to AQFT” (full marks and honours)
- September 2018 - MSc - Riccardo Barbieri (University of Pavia) - “Residual Spin Misalignments in Gas-driven Inspirals of Supermassive Black-Hole Binaries” (full marks and honours)-
- September 2018 - MSc - Paolo Rinaldi (University of Pavia) - “Ricci Flow from Euclidean Renormalization Group Techniques” (full marks and honours) – cosupervisor (M. Carfora supervisor) – **awarded with the Grazioli Price 2018 at the Istituto Lombardo.**
- September 2018 - BSc - Giorgio Musante (University of Pavia) - “Un approccio algebrico alla condensazione di Bose-Einstein” (full marks and honours).
- July 2018 - BSc - Eugenio Mauri (University of Pavia) - - “Introduction to Quantum Backflow” (full marks and honours).
- April 2018 - IUSS - Alice Marveggio (University of Pavia) - “Balance Principles and Laws in Continuum Mechanics: a Geometric Approach” (full marks)
- April 2018 - IUSS - Giovanni Brigati (University of Pavia) - “Lie Groups and their Applications to Differential Equations” (full marks)
- April 2018 - MSc - Alessio Marta (University of Milan) - “Ground State for a Massive Scalar Field in AdS Spacetime with Robin Boundary Conditions” (110/110 e lode)

- February 2018 - BSc - Alessandro Monteverdi (University of Pavia) - “Stabilità ed Attrattori” (101/110)
- October 2017 - MSc - Luca Apadula (University of Pavia & Sissa) - “Quantum Reduced Loop Gravity” (full marks and honours)
- September 2017 - BSc - Alice Marveggio (University of Pavia) - “Wave Propagation for Systems of Conservation Laws and its Applications to Fluid Dynamics” (full marks and honours).
- July 2017 - BSc - Rubens Longhi (University of Pavia) - “On the fundamental solutions for wave-like equations on curved backgrounds” (full marks and honours).
- May 2017 - IUSS - Matteo Capoferri (University College London) - “A microlocal-analytic approach to the propagator of the wave operator” - (full marks and honours).
- December 2016 - MSc - Gioele Botta (University of Pavia & Sissa) - “New cosmological singularity resolution from quantum gravity: the Emergent-Bouncing universe” (full marks and honours).
- October 2016 - BSc - Angelo Naldi (University of Pavia) - “Introduzione alle equazioni di Eulero con applicazioni ai flussi potenziali” (104/110).
- September 2016 - BSc - Denny Trimcev (University of Pavia) - “Solitonic Solutions of NLS equation applied to Bose-Einstein Condensates” (110/110).
- September 2016 - IUSS - Paolo Rinaldi (University of Pavia) - “ C^* - and von Neumann Algebras: Structural Aspects of the Observables of a Quantum System” (excellent)
- July 2016 - MSc - Giovanni Canepa (University of Pavia) - “An Ideal Characterization of Friedmann-Lemaitre-Robertson-Walker Spacetimes” (full marks and honours)
- July 2016 - MSc - Matteo Capoferri (University of Pavia) - “Algebra Of Observables And States For Quantum Abelian Duality” (full marks and honours) – **awarded with the Grazioli Price 2016 at the Istituto Lombardo**
- July 2016 - BSc - Paolo Rinaldi (University of Pavia) - “Criteri per l’Identificazione di Osservabili in Meccanica Quantistica” (full marks and honours)
- November 2015 - MSc - Antonio Michele Miti (University of Milan) - “Algebraic Quantization of Jacobi Fields and Geometric Approach to Peierls Brackets” (110/110).
- October 2015 - BSc - Marcello Lanfranchi (University of Pavia) - “Formalizzazione algebrica del processo di quantizzazione e deformazione di C^* -algebra” (103/110).
- July 2015 - BSc - Gabriele Benomio (University of Pavia) - “Thermal equilibrium states in the algebraic formulation of quantum mechanics” (full marks and honours).
- December 2014 - MSc - Federico Faldino (University of Pavia) - “On the loop quantization of field theories” (full marks).
- October 2014 - IUSS - Giovanni Canepa (University of Pavia) - “Riesz potentials and construction of Green functions for wave-like equations” (excellent)
- October 2014 - IUSS - Matteo Capoferri (University of Pavia) - “The handling of singularities: an introduction to microlocal analysis” (excellent)
- October 2014 - IUSS - Sara Riccò (University of Pavia & of Geneva) - “B-modes and the CMB” (excellent)
- July 2014 - BSc - Matteo Capoferri (University of Pavia) - “On the time observable in non-relativistic quantum mechanics” (full marks and honours)
- July 2014 - BSc - Giancarlo Croce (University of Pavia) - “Operatori di Casimir” (full marks and honours).
- April 2014 - MSc - Alberto Melati (University of Pavia) - “Curvature fluctuations in asymptotically de Sitter spacetimes” (110/110).
- April 2014 - MSc - Sara Riccò (University of Pavia) - “States of low energy for the Dirac field on cosmological spacetimes” (full marks and honours).

- December 2013 - BSc - Matteo Facchini (University of Pavia) - “Gruppi di simmetria e regola di superselezione di Bargmann” (full marks and honours).
- October 2013 - MSc - Gabriele Nosari (University of Pavia) - “Point-splitting Hadamard regularization and the Casimir effect” (110/110)
- October 2013 - MSc - Simone Murro (University of Pavia) - “Hadamard states for linearized gravity in asymptotically flat spacetimes” (110/110).
- May 2013 - IUSS - Matteo Lostaglio (University of Pavia & Imperial College) - “Geometry and Physics: Gauge and Lorentz invariance” (outstanding)
- May 2013 - IUSS - Alessio Belenchia (University of Pavia & SISSA) - “Inflazione cosmologica: teoria ed osservazioni” (outstanding)
- February 2012 - BSc - Luca Mantovani (University of Pavia) “On the algebraic formulation of quantum mechanics” (104/110)
- December 2011 - BSc - Daniele Castellana (University of Pavia) “Relativity and Thermodynamics” (full marks)
- November 2011 - BSc - Davide Polini (University of Pavia) “On the dynamics of free field from the representations of the Poincaré group” (full marks and honours)
- October 2011 - MSc - Marco Benini (University of Pavia) “On the relative Cauchy evolution for spin 1 fields” (full marks and honours)
- May 2011 Daniel Siemssen (Universität Hamburg): “Hadamard states for the vector potential in asymptotically flat spacetimes” http://www.desy.de/uni-th/theses/Dipl_Siemssen.pdf, co-supervisor
- July 2005 Simona Raschi: “Black holes spectroscopy” (full marks and honours), co-supervisor
- March 2004 Davide Cassani: “Topological field theories and the quantum Hall effect” (full marks and honours), co-supervisor
- March 2003 Giuditta Parolini: “Lie algebra and conformal field theories” (full marks and honours), co-supervisor

Committees

- 2021 – Member of the evaluation committee for the admission to the PhD in physics (XXXVII cycle).
- 20/03/2020 Referee and member of the evaluation committee for the final dissertation of Christian Röken (Univ. of Granada - Ph.D. in mathematics)
- 10/12/2019 Referee and member of the evaluation committee for the final dissertation of João Braga Vasconcellos (Univ. of Genoa - Ph.D. in mathematics)
- 15/02/2019 Referee and member of the evaluation committee for the final dissertation of Luca Curcuraci (Univ. of Trieste - Ph.D. in physics)
- 30/11/2018 Referee and member of the evaluation committee for the final dissertation of Massimo Gengo (Univ. of Milan - Ph.D. in mathematics)
- 06/04/2018 Referee and member of the evaluation committee for the final dissertation of Alberto Melati (Univ. of Trento - Ph.D. in physics)
- 24/04/2017 Referee and member of the evaluation committee for the final dissertation of Simone Murro (Univ. of Regensburg - Ph.D. in mathematics)
- 24/02/2016 Referee and member of the evaluation committee for the final dissertation of Antoine Géré (Univ. of Genova - Ph.D. in mathematics)
- 22/02/2016 Member of the evaluation committee for the final dissertation of Davide Fermi (Univ. of Milan - Ph.D. in mathematics)

- 13/11/2014 Member of the evaluation committee for the final dissertation of Davide Pastorello (Univ. of Trento - Ph.D. in mathematics)
- 2013-2016 Member of the Joint Committee of the Department of Physics - University of Pavia
- February 2013 Referee for the Ph.D. thesis of Zhirayr Avetisyan - Institute of Physics at the Univ. of Leipzig

Teaching Experience

- MOOC “Precalculus” (12 hours in Italian & 12 hours in English), academic year 2021/2022, jointly with Prof. Marco Veneroni (Dept. of Math. – U. of Pavia)
- Chair of “Mathematical Methods for Theoretical Physics” (6 credits), academic year 2020/2021
- Chair of “Mathematical Methods in Physics II” (6 credits), academic year 2020/2021
- Introductory Course “Mathematics for Physicists” (12 hours), academic year 2020/2021
- Chair of “Advanced Topics in Quantum Field Theory”, academic year 2019/2020, graduate school in physics.
- Chair of “Mathematical Methods for Theoretical Physics” (3 credits), academic year 2019/2020
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2019/2020
- Chair of “Mathematical Methods in Physics II” (6 credits), academic year 2019/2020
- Mini-course on “Application of Variational Methods to Classical Field Theory” (May 2019 – Class of Science, Collegio Borromeo)
- Chair of “Mathematical methods of quantum theories”, graduate school in physics, academic year 2018/2019,
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2018/2019 (degree in physics and mathematics - Univ. Pavia)
- Chair of “Mathematical Methods in Physics II” (6 credits), academic year 2018/2019 (bachelor in physics - Univ. Pavia)
- Chair of “Mathematical Introduction to Fluid Dynamics”, academic year 2017/2018, graduate school in physics.
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2017/2018 (degree in physics and mathematics - Univ. Pavia)
- Chair of “Mathematical Methods in Physics II” (6 credits), academic year 2017/2018 (bachelor in physics - Univ. Pavia)
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2016/2017 (degree in physics and mathematics - Univ. Pavia)
- Chair of “Mathematical Introduction to Fluid Dynamics”, academic year 2016/2017 (IUSS Pavia - Class of Science)
- Chair of “Mathematical Methods in Physics II” (6 credits), academic year 2016/2017 (bachelor in physics - Univ. Pavia)
- Chair of “Mathematical methods of quantum theories”, graduate school in physics, academic year 2015/2016,
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2015/2016 (degree in physics and mathematics - Univ. Pavia)
- Assistant for “Classical Mechanics” (3 credits), academic year 2015/2016 (degree in physics - Univ. Pavia)
- Chair of “Group Theory and Physical Symmetries” (6 credits), academic year 2014/2015 (degree in physics and mathematics - Univ. Pavia)

- Assistant for “Classical Mechanics” (3 credits), academic year 2014/2015 (degree in physics - Univ. Pavia)
- Chair of “Spacetime Structure, Cosmology, and Quantum Field Theory”, academic year 2013/2014 (PhD programme in physics - Univ. Pavia)
- Chair of “Group Theory and Physical Symmetries”, academic year 2013/2014 (degree in physics and mathematics - Univ. Pavia)
- Assistant for “Classical Mechanics” (3 credits), academic year 2013/2014 (degree in physics - Univ. Pavia)
- Chair of “Group Theory and Physical Symmetries”, academic year 2012/2013 (degree in physics and mathematics - Univ. Pavia)
- Assistant for “Classical Mechanics”, academic year 2012/2013 (degree in physics - Univ. Pavia)
- Coordinator of the Ph.D. course “Spacetime structure, Cosmology, and Quantum Field Theory”, Ph.D. school in Physics, academic year 2012/2013,
- Chair of “Group Theory and Physical Symmetries”, academic year 2011/2012 (degree in physics and mathematics - Univ. Pavia)
- Assistant for “Classical Mechanics”, academic year 2011/2012 (degree in physics - Univ. Pavia)
- Assistant for “General Relativity”, academic year 2010/2011 (degree in physics and mathematics - Univ. Pavia)
- Assistant for “Quantum Mechanics 2”, academic year 2008/2009 (degree in physics and mathematics - Univ. Hamburg)
- Teaching assistant for “Differential Equations and Dynamical Systems”, academic year 2006/2007 (degree in physics and mathematics - Univ. Pavia)
- Teaching assistant for “Group Theory”, academic year 2006/2007 (degree in physics and mathematics - Univ. Piemonte Orientale)
- Seminars for “General Relativity”, academic year 2005/2006. (degree in physics and mathematics - Univ. Pavia)
- Teaching assistant for “Gruppi e Simmetrie Fisiche” (Group theory and Physical Symmetries), academic year 2005/2006. (degree in physics and mathematics - Univ. Pavia)
- Teaching assistant for “Meccanica Razionale” (Classical Mechanics), academic year 2004/2005. (degree in physics - Univ. Pavia),
- Teaching assistant for “Geometria” (Linear Algebra) academic year 2002/2003 (degree in physics and mathematics - Univ. Pavia),
- Tutor for the physics course - degree in “chemistry technician”. academic year 2000-2001,
- Tutor for Electromagnetism and Experimental Electromagnetism, academic year 1999-2000 and 2000-2001 (degree in physics - Univ. Pavia).

Conference and Seminar Organization

- Member of the Organizing Committee of the Workshop “Scattering, microlocal analysis and renormalization” – Mittag Leffler Institute in Stockholm (01th-05th June 2020) – online (25/05 – 18/06) due to Covid emergency.
- Member of the Organizing Committee of the INDAM Workshop “Algebraic Quantum Field Theory: Where Operator Algebras meets Microlocal Analysis” – Cortona, (04th-08th of June 2018),
- Organizer Committee of the miniworkshop “Quantum Mathematical Physics Day in Pavia”, Pavia 05th of July 2017,
- Member of the Organizing Committee of the topical Workshop “Foundational and structural aspects of gauge theories”, MITP - Mainz (27th of May – 02nd of June 2017),

- Member of the Organizing Committee of the topical Workshop “Microlocal Analysis: A Tool to Explore the Quantum World”, Department of Mathematics - Genoa (12-13 January 2017),
- Member of the Organizing Committee of the Workshop “Algebraic Quantum Field Theory: its status and its future”, Erwin Schrödinger Institute - Vienna (19th-23rd May 2014),
- Member of the Organizing Committee of the Mini-Workshop “New Crossroads between Mathematics and Field Theory”, Oberwolfach (21st-27th July 2013),
- Member of the Scientific Committee of the Conference “Mathematical Aspects of Quantum Field Theory and Quantum Statistical Mechanics”, Satellite Meeting of the ICMP2012, Hamburg (30th of July - 01st of August 2012),
- Member of the Scientific Committee of the Workshop “Planckland: Quantum Geometry and Matter”, Sissa-Trieste (13th-18th February 2012),
- Member of the Organizing Committee of the Workshop “Modern Trends in Algebraic Quantum Field Theory”, Pavia (14th-16th September 2011),
- Member of the Organizing Committee of the Workshop “Foundational Aspects of Cosmology”, Hamburg (16th-18th February 2011),
- Organizer of the Mathematical and Quantum Field Theory Seminars at the II. Institut für Theoretische Physik (Hamburg Universität) - 2008/2009,
- Member of the Organizing Committee of the 22nd LQP Workshop, Hamburg (06th-07th June 2008),
- Member of the Conference Secretariat for the Conference “Spacetime in action”, Pavia (29-03/02-04 2005).

Outreach

Lecture *From Newton to Black Holes* given within the Stage for High School Students, organized by the Department of Physics - University of Pavia - July 2019 and September 2020.

F. Bussola and C. Dappiaggi, *Ligo e Le Onde Gravitazionali*, RADIAZIONI RICERCA E APPLICAZIONI, Periodico della Società Italiana per le Ricerche sulle Radiazioni, Vol XIX (2016).

Several talks for high school classes, the Physics Stage at the Department of Physics of the University of Pavia in 2019 and at the π -day on General Relativity and Gravitational waves. I built and presented together with N. Protti (INFN - Pavia) a solar oven for the ERN 2016. I participated to the INFN Programme “Aggiornamenti” aimed to Middle School Teachers.

Technical Skills

Computer Skills: Linux, L^AT_EX, Html.

Pavia, li 05/10/2020
 Claudio Dappiaggi