Curriculum Vitae – Nicolò Drago – December 2017

Personal informations

Home adress: Via Molassana 15/18; 16138 Genova, Italy.

Email: nicolo.drago@unipv.it nicolo.drago89@gmail.com.

Personal data: Male, born in Genova (Italy) November 1, 1989; Nationality: Italy.

Present position: Post-Doc at the Department of Physics, Università di Pavia.

Education and training

2017 Ph.D. course in Mathematics at the Department of Mathematics at Università degli Studi di Genova (Italy, 2014 01 01 - 2016 12 12).
Thesis Title: *Perturbative methods in Algebraic QFT with applications to Thermal Field Theory.*
Discussed in Genova, Italy (2017 02 22).
Advisor: Prof. Nicola Pinamonti.

2013 MSc in Mathematics at Università degli Studi di Genova (Italy, 2011-2013).
Thesis Title: *The influence of quantum fields on the geodesic path.*
Discussed in Genova, Italy (2013 07 24).
Advisor: Prof. Nicola Pinamonti.
Marks: 110 / 110 cum laude.

2011 BSc in Mathematics at Università degli Studi di Genova (Italy, 2008-2011).
Thesis Title: *The problem of vibrating string in one spatial dimension.*
Discussed in Genova, Italy (2011 09 28).
Advisor: Prof. Franco Caviglia.
Marks: 110 / 110 cum laude.

2008 Italian High School diploma at the Liceo Scientifico Statale "Leonardo da Vinci" (Genova, Italy, 2003-2008).
School-leaving examination mark: 98/100.

Awards

2017 Erasmus Plus Grant 2017 (KA 103). This grants were used for a one week series of lectures at Julius Maximiliam University of Wuerzburg (Germany) 2017 10 09 - 13;

Principal investigator in the GNFM-INdAM research project "Wave propagation on Lorentzian manifolds with boundaries and applications to Algebraic QFT", in collaboration with Dr. H. Ferreira, funded by GNFM (Gruppo Nazionale di Fisica Matematica) within the funds reserved for young researchers (Progetto Giovani) for the year 2017.

2016 Cassini project, financed by the Embassy of France in Italy.
This grants were used to organize the *Microlocal Analysis: a tool to explore the Quantum World* Workshop, held at Department of Mathematics of Università degli Studi di Genova (2017 01 12-13);

Visiting positions in other scientific Institutions

2016 visit to prof. Christian Gérard,
Départment de Mathématiques d'Orsay Université de Paris-Sud, Paris (France),
September 13 2015 - March 13 2016;

2015 visit to prof. K. Fredenhagen, DESY, Hamburg (Germany),
March 15 - March 29, 2015.

Preprints

1. N. Drago, *Thermal state with quadratic interaction*, arXiv:1711.01072.
2. F. Faldino, N. Drago, N. Pinamonti,
Relative entropy and entropy production for equilibrium states in pAQFT, arXiv:1710.09747.

Published papers

1. N. Drago, S. Murro,
A new class of Fermionic Projectors: Møller operators and mass oscillation properties,
Lett Math Phys (2017) 107: 2433. doi: 10.1007/s11005-017-0998-z.
2. N. Drago, C. Gérard, *On the adiabatic limit of Hadamard states*,
Lett Math Phys (2017) 107: 1409. doi:10.1007/s11005-017-0947-x.
3. N. Drago, F. Faldino, N. Pinamonti,
On the stability of KMS states in perturbative algebraic quantum field theories,
Commun. Math. Phys. (2017). doi: 10.1007/s00220-017-2975-x.
4. C. Dappiaggi, N. Drago, *Constructing Hadamard States via an Extended Møller Operator*,
Lett Math Phys (2016) 106(11), 1587-1615. doi:10.1007/s11005-016-0884-0.
5. N. Drago, T-P. Hack, N. Pinamonti,
The generalized principle of Perturbative Agreement and the thermal mass,
Ann. Henri Poincaré (2016). doi:10.1007/s00023-016-0521-6.
6. N. Drago, N. Pinamonti, *Influence of quantum matter fluctuations on geodesic deviation*,
J. Phys. A: Math. Theor. 47 (2014) 375202. doi:10.1088/1751-8113/47/37/375202.

Invited talks

2017 *Introduction to the Algebraic approach to Quantum Field Theory on curved backgrounds*,
Lectures at Julius Maximiliam University of Wuerzburg (Germany), 2017 10 9 - 13;

Perturbative methods in Algebraic QFT with applications to Thermal Field Theory,
invited seminar within Séminaire de physique mathématique à Institut Camille Jordan, UMR 5208,
Lyon (France), 2017 04 07;

2016 *Aspects of Algebraic Quantum Field Theory on Curved Spacetime*,
invited seminar within Séminaire GDT: Problèmes Spectraux en Physique Mathématique à l'IHP,
Paris (France), 2016 03 01;

2015 *The generalized principle of Perturbative Agreement and the thermal mass*,
invited seminar at the Department of Physics of Università di Pavia, Pavia (Italy), 2015 02 25-26;

Contributed talks

2017 *A mathematical approach to renormalization*,
talk within *QFT Day in Milan: mathematical aspects of renormalization*, Milan (Italy), 2017 04 23;

On the adiabatic limit of Hadamard states,
talk within 39th LQP Workshop "Foundations and Constructive Aspects of QFT", Münster (Germany), 2017 01 20-21;

2016 *The algebraic approach to Quantum Field Theory*,
talk within PhD Seminar at the Department of Mathematics, Genoa (Italy), 2016 12 15;

2015 *The generalized principle of Perturbative Agreement and the thermal mass*,
talk within 36th LQP Workshop "Foundations and Constructive Aspects of QFT", Leipzig (Germany), 2015 05 29-30;

The generalized principle of Perturbative Agreement and the thermal mass,
talk within "New Trends in Algebraic Quantum Field Theory" workshop, Frascati (Italy), 2015 02 11-13;

2014 *Influence of quantum matter fluctuations on geodesics deviation*,
talk within 34th LQP Workshop "Foundations and Constructive Aspects of QFT", Erlangen (Germany), 2014 04 25-26;

Teaching experience

2017 Deepening seminar at Università di Pavia within the course "Mathematical methods for physicists".

Referee's activity

Referee of *Advances in Mathematical Physics*.

Conference and workshop organization

2017 Organizer of the *Microlocal Analysis: a tool to explore the Quantum World* Workshop, Genoa, 2017 01 12-13;

Advisor of the Bachelor Thesis

2017 Bachelor Thesis in Physics of A. Marveggio, *Hyperbolic Systems of Conservation Laws and Mathematical Theory of Shock Waves*.

Bachelor Thesis in Physics of R. Longhi, *On the Fundamental Solutions for Wave-like Equations on Curved Backgrounds*.

Attended conferences

2017 40th LQP Workshop "Foundations and Constructive Aspects of QFT" Leipzig Max-Planck institute for Mathematics in the Sciences, Leipzig (Germany), June 23 - 24, 2017;

Foundational and structural aspects of gauge theories, Mainz Institute for Theoretical Physics, Mainz (Germany), May 29 - June 02, 2017;

2016 *Local Quantum Physics and beyond - in memoriam Rudolf Haag*, Institut für Theoretische Physik Universität Hamburg, Hamburg (Germany), September 26 - 27, 2016;

Geometric Cauchy Problems on Lorentzian Manifolds Summer School, University of Regensburg, Regensburg (Germany), August 1 - 5, 2016;

38th LQP Workshop "Foundations and Constructive Aspects of QFT", Munchen (Germany), May 27-28 2016;

37th LQP Workshop "Foundations and Constructive Aspects of QFT", Gottingen (Germany), January 15-16 2016;

2015 *Modern theory of wave equations* Workshop Erwin Schrödinger International Institute for Mathematics and Physics, Vienna (Austria), September 7 - September 12, 2015;

From Poisson Geometry to Quantum Field on Non Commutative Spaces Autumn School, University of Würzburg, Würzburg (Germany), October 5 - October 10, 2015;

2014 *Asymptotic Analysis and in General Relativity* Summer School & Workshop, Université Grenoble Alpes, Institut Fourier, Grenoble (France), June 16 - July 4, 2014;

Operator and Geometric Analysis on Quantum Theory Conference, Levico Terme (Italy), September 15 - September 19, 2014;

Quantum Mathematical Physics Conference, University of Regensburg, Regensburg (Germany), September 29 - October 2, 2014;

35th LQP Workshop "Foundations and Constructive Aspects of QFT", Goslar (Germany), November 21 - November 22, 2014;

Outreach

2017 Stage within the open day for high school at the Deparment of Mathematics of the Università di Genova (2017 02 03);

2015 Stage within the open day for high school at the Deparment of Mathematics of the Università di Genova (2015 02 04-05);

Work experiences

2015 Freshmen tutor at the Università di Genova, Department of Mathematics from 2016 03 - 06 (Genova, Italy).

2014 Freshmen tutor at the Università di Genova, Department of Mathematics from 2014 09 - 2015 07 (Genova, Italy).

Freshmen tutor at the Università di Genova, Department of Engineer from 2014 09 - 2015 07 (Genova, Italy).

2012 Freshmen tutor at the Università di Genova, Department of Mathematics from 2012 06 - 12 (Genova, Italy).

Foreign language skills

Italian: mother tongue. English: fluent. French: fluent.

Information technology skills

Operating systems: Windows.
Programming languages: MatLab, Latex, CoCoA.