

CURRICULUM VITAE

FABIO BRISCESE

PERSONAL DETAILS

First name: Fabio
Last name: Brisceese
Gender: male
Date of birth: 13th of June, 1979
Place of birth: Venosa, Italy
Current citizenship: Italian
Marital status: married

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INSTITUTIONS

Department of Physics, Southern University of Science and Technology, No. 1088, Xueyuan Rd, Xili, Nanshan District, 518055 Shenzhen, Guangdong, P.R. China

and

Istituto Nazionale di Alta Matematica Francesco Severi, Gruppo Nazionale di Fisica Matematica, Città Universitaria-Piazzale A. Moro 5, c.a.p. 00185, Rome, Italy.

EMPLOYMENTS

- 12/2017-11/2019 Research Associate Professor, Department of Physics, Southern University of Science and Technology, Shenzhen, P.R. China.
- 09/2016-08/2017 Senior Lecturer (fixed term) at the Department of Mathematics, Physics and Electrical Engineering, Northumbria University, Newcastle upon Tyne, UK.
- 10/2015-12/2015 Visiting Researcher at IIM, Universidad Nacional Autónoma de México, A. P. 70-360, 04510 México, DF, México.
- 08/2014-09/2015 Postdoc at the Physics Department, CCEN, Universidade Federal da Paraíba, Cidade Universitária, 58051-970 João Pessoa, PB, Brazil.
- 06/2012-06/2014 Marie Curie Fellow of the Istituto Nazionale di Alta Matematica Francesco Severi at Dipartimento SBAI, Sezione di Matematica, Sapienza Università di Roma, Via Antonio Scarpa 16, 00161 Rome, Italy.
- 10/2011-06/2012 Postdoc at the School of Physics of UIS-Universidad Industrial de Santander, Ciudad Universitaria, Bucaramanga 680002, Colombia
- 03/2008-02/2011 Postdoc at the Physics Institute of UNAM University in México City, México.

EDUCATION AND QUALIFICATIONS

- 2017 Italian National Academic Qualification as Associate Professor in Theoretical Physics of Fundamental Interactions, from March 2017 to March 2023 (Abilitazione Scientifica Nazionale seconda fascia, settore: Fisica Teorica delle Interazioni Fondamentali).
- 11/2004-02/2008 Ph.D. in applied mathematics at the Me.Mo.Mat. department, "La Sapienza" University of Rome, Italy.
Project title: *Cosmology with quantum-gravity-inspired modifications of general relativity*.
Supervisor: Prof. G. Amelino-Camelia
Final exam 19 February 2008.
- 5/2004-11/2004 Ph.D. entrance exam.
Selected for one of the three Ph.D. positions in applied mathematics at the Me.Mo.Mat. department, "La Sapienza" University of Rome, Italy.
- 9/1997-9/2003 Master in Physics at "La Sapienza" University of Rome, Italy.
 - From academic year 1997/1998 to 2000/2001: Fundamental studies of Physics.
 - Academic years 2001/2002: Advanced Studies in Theoretical Physics (in the area of Gravitation and Quantum Field Theory).
 - Theoretical Physics Thesis: *Pentadimensional unification theories*. Supervisors: Prof. V. Belinski and Prof. R. Ruffini.
 - Graduation on 25 September 2003.
Diploma: Master Degree in Physics.
Degree: 110/110 Cum Laude.
- 9/1993-7/1997 Graduation at Liceo-Scientifico Statale "Federico II di Svevia", Melfi, Italy.

FELLOWSHIPS AND AWARDS

- 2015 Micro One World Grant assigned by the Marie Curie Alumni Association.
- 06/2012-06/2014 "INdAM Fellowships in Mathematics and/or Applications for experienced researchers cofunded by Marie Curie actions" assigned by INdAM.
- 03/2008-02/2009 Fellowship "Borsa di Studio di Perfezionamento all'Estero" assigned by La Sapienza University of Rome.

ACADEMIC ACTIVITIES

- 2016/17 Senior Lecturer at the Department of Mathematics, Physics and Electrical Engineering, Northumbria University, Newcastle upon Tyne, UK. Courses:
 - *Further Engineering Mathematics*
 - *Further Mathematics for Building Services Engineers*
 - *Particles, Waves and the Big-Bang*.
- 2011/12 Professor at the School of Physics of UIS-Universidad Industrial de Santander in Bucaramanga, Colombia.
Course: *Introduction to Quantum Field Theory*.
- 2005/06 Assistant professor of prof. A. Savo at the Faculty of Engineering of La Sapienza University of Rome, Italy.
Course: *Geometry II*.
- 2005/06 Assistant professor of prof. D. Giachetti at the Faculty of Engineering of La Sapienza University of Rome, Italy.
Course: *Mathematical Analysis II*.

TEACHING INTERESTS

General Relativity: introductory and advanced course

Cosmology

Differential Geometry

Geometry

Linear Algebra

Mathematical Analysis

Mathematical Physics

Introduction to Quantum Field Theory

General physics and thermodynamics

PUBLICATIONS IN REFEREED JOURNALS

- F. Briscece, *Collective behavior of light in vacuum*, Phys. Rev. A **97** (March 2, 2018) 033803.
DOI:10.1103/PhysRevA.97.033803.
- F. Briscece, F. Calogero, *Isochronous solutions of Einstein's equations ant their Newtonian limit*, Int. J. Geom. Meth. Mod. Phys. **15** (March 1, 2018) 1850101.
DOI: 10.1142/S0219887818501013.
- F. Briscece, *Light polarization oscillations induced by photon-photon scattering*, Phys. Rev. A **96** (November 1, 2017) 053801.
DOI: 10.1103/PhysRevA.96.053801.
- F. Briscece, *The Schrödinger-Poisson equations as the large- N limit of the Newtonian N -body system: applications to the large scale dark matter dynamics*, Eur. Phys. J. C (September 7, 2017) **77**:623.
DOI: 10.1140/epjc/s10052-017-5209-7.
- F. Briscece, P. M. Santini, *On the occurrence of gauge-dependent secularities in nonlinear gravitational waves*, Class. Quantum Grav. **34** (June 20, 2017) 144001.
DOI: 10.1088/1361-6382/aa7451.
- F. Briscece, M. L. Pucheu, *Palatini formulation of on-local gravity*, Int. J. of Geom. Meth. in Mod. Phys. **14** (October 7, 2016) 1750019.
DOI: 10.1142/S0219887817500190.
- F. Briscece, E. R. Bezerra de Mello, A. Yu. Petrov, V.B. Bezerra, *One-loop effective potential in nonlocal scalar field models*, Phys. Rev. D **92**, 104026 (November 10, 2015).
DOI: 10.1103/PhysRevD.92.104026.
- E. Castellanos, F. Briscece, M. Grether, M. de Llano. *Weakly interacting Bose-Einstein condensates in temperature-dependent generic traps*, JETP Letters, Pis'ma v ZhETF, vol. **101**, Issue 8 (March 16, 2015), pp. 631-636.
DOI: 10.7868/S0370274X15080123.
- F. Briscece, S. Sergeenkov, M. Grether, M. de Llano. *Origin of nonlinear contribution to the shift of the critical temperature in atomic Bose-Einstein condensates*, JETP Letters, Pis'ma v ZhETF, **101**, Issue 6 (December 23, 2014), pp. 410-413.
DOI: 10.1134/S0021364015060119.
- F. Briscece, F. Calogero. *Isochronous Spacetimes*. Acta App. Math. **137**, Issue 1, pp 3-16 (Dec 09, 2014).
DOI: 10.1007/s10440-014-9988-7.

- F. Briscese, F. Calogero. *Isochronous Cosmologies*. Int. J. Geom. Meth. Mod. Phys. **11** (April 29, 2014) 06, 1450054.
DOI: 10.1142/S0219887814500546.
- F. Briscese, L. Modesto, S. Tsujikawa. *Super-renormalizable or finite completion of the Starobinsky theory*, Physical Review D **89**, 024029 (January 27, 2014).
DOI: 10.1103/PhysRevD.89.024029.
- F. Briscese. *Interaction effects on atomic laboratory trapped Bose-Einstein condensates*. Euro Physics Journal B **86**: 343 (August 1, 2013).
DOI: 10.1140/epjb/e2013-40551-y.
- F. Briscese, A. Marciano, L. Modesto, E.N. Saridakis. *Inflation in Super-renormalizable Gravity*. Physical Review D **87**, Issue 8, 083507 (April 5, 2013).
DOI: 10.1103/PhysRevD.87.083507.
- F. Briscese. *Trapped Bose-Einstein condensates with Planck-scale induced deformation of the energy-momentum dispersion relation*. Physics Letters B **718**, Issue 1, Pages 214-217, (November 15, 2012).
DOI: 10.1016/j.physletb.2012.10.022.
- F. Briscese, M. Grether, M. de Llano, George A. Baker Jr. *Study of stability of relativistic ideal Bose-Einstein condensates*. Physics Letters A **376**, Issue 45, Pages 2911-2916 (October 1, 2012).
DOI: 10.1016/j.physleta.2012.08.036
- F. Briscese, Y. Rodriguez, G.A. Gonzalez, *On the True Nature of Renormalizability in Horava-Lifshitz Gravity*. Foundations of Physics **42**, Issue 11, Pages 1444-1451, (November 1, 2012).
DOI: 10.1007/s10701-012-9677-1.
- F. Briscese, M. Grether, M. de Llano, *Planck-scale effects on Bose-Einstein condensates*. Euro Physics Letters **98**, 60001, (June 20, 2012).
DOI: 10.1209/0295-5075/98/60001.
- F. Briscese. *Viability of complex self-interacting scalar field as dark matter*, Physics Letters B **696**, Issue 4, Pages 315-320, (February 7, 2011).
DOI: 10.1016/j.physletb.2010.12.064.
- G. Amelino-Camelia, F. Briscese, G. Gubitosi, A. Marcianò, P. Martinetti, F. Mercati, *Twisted Hopf symmetries of canonical noncommutative spacetimes and the no-pure-boost principle*. Physical Review D **78**, 025005, (July 7, 2008).
DOI: 10.1103/PhysRevD.78.025005.
- F. Briscese, E. Elizalde, *Black hole entropy in modified-gravity models*. Physical Review D **77**, 044009, (February 7, 2008).
DOI: 10.1103/PhysRevD.77.044009.
- F. Briscese, E. Elizalde, S. Nojiri, S. D. Odintsov, *Phantom scalar dark energy as modified gravity: understanding the origin of the Big Rip singularity*. Physics Letters B **646**, Pages 105-111, (March 8, 2007).
DOI: 10.1016/j.physletb.2007.01.013.

SUBMISSIONS TO REFEREED JOURNALS

- F. Briscese, L. Modesto, *Cutkosky rules and perturbative unitarity in Euclidean nonlocal quantum field theories*, arXiv:1803.08827 [gr-qc].

PROCEEDINGS

- F. Briscese, F. Calogero, *Isochronous spacetimes and cosmologies*. Journal of Physics: Conference Series **626** (2015) 012004.
DOI: 10.1088/1742-6596/626/1/012004

- F. Briscese, M. Grether and M. de Llano, *Quantum gravity effects on laboratory Bose-Einstein condensates*. Proceedings of the Thirteenth Marcel Grossmann Meeting (2015) pp. 2183-2185.
DOI: 10.1142/9789814623995_0392
- F. Briscese, *Self-interacting complex scalar field as dark matter*. AIP Conf. Proc. **1396**, 176-180 (October 14, 2011).
DOI: 10.1063/1.3647543
- A. de la Macorra and F. Briscese, *Dark energy due to late time quantum decay process*. AIP Conf. Proc. **1241**, 811-815 (June, 23 2010).
DOI: 10.1063/1.3462721
- A. de la Macorra and F. Briscese, *Quantum regeneration of dark energy and unification with the inflation field*. AIP Conf. Proc. **1116**, 179-187 (April 20, 2009).
DOI: 10.1063/1.3131552

CONFERENCES, SCHOOLS AND COLLABORATIONS

- | | |
|------------|---|
| 07-09/2015 | Visiting at Sapienza University, Rome, Italy. |
| 07/2015 | XIV Marcell Grossman Meeting, Sapienza University, Rome, Italy. |
| 02/2015 | VI Verão Cuantico, Physics Department, CCEN, João Pessoa, PB, Brazil |
| 12-01/2014 | Visiting at Sapienza University, Rome, Italy. |
| 12/2014 | Workshop "Integrable systems—continuous and discrete— and the transition to chaos", Centro Internacional de Ciencias, Cuernavaca, México. |
| 11/2014 | Visiting at Instituto de Investigaciones en Materiales, UNAM, Mexico City, Mexico. |
| 11/2014 | School "Group Theory and Knots", IIP, Natal, Brazil. |
| 5/2014 | Conference "Origin of Mass", University of Southern Denmark, Odense, Denmark. |
| 5/2014 | Conference "Symmetry and Perturbation Theory", Cala Gonone, Italy. |
| 01-02/2013 | Visiting at the School of Physics of UIS University, Bucaramanga, Colombia. |
| 12/2013 | Visiting at the Brazilian Center for Research in Physics (CBPF), Rio de Janeiro, Brazil. |
| 09/2013 | Seventh Aegean Summer School on "Beyond Einstein's Theory of Gravity, Parikia, Island of Paros, Greece. |
| 05-08/2013 | Visiting at Instituto de Investigaciones en Materiales, UNAM, Mexico City, Mexico. |
| 05/2013 | Visiting at Los Andes University, Bogotá, Colombia. |
| 01/2013 | Visiting at IEEC - Bellaterra, Universitat Autònoma de Barcelona (UAB), Bellaterra (Barcelona), Spain. |
| 01/2013 | Visiting at Instituto de Estructura de la Materia - CSIC, Madrid, Spain. |
| 11/2012 | Workshop "Integrable systems—continuous and discrete— and the transition to chaos". Centro Internacional de Ciencias Cuernavaca, México. |
| 07/2012 | XIII Marcel Grossmann Meeting, Stockholm, Sweden. |
| 08/2011 | Visiting at Instituto de Investigaciones en Materiales, UNAM, Mexico City, Mexico. |
| 11/2010 | VIII Workshop of the Gravitation and Mathematical Physics Division of the Mexican Physical Society, Tuxtla Gutierrez, Chiapas, México. |

01/2010	School "Cosmology on the beach, essential cosmology for the next generation", Playa del Carmen, Quintana Roo, México.
12/2009	School "VIII School of the Gravitation and Mathematical Physics Division of the Mexican Physical Society ", Playa del Carmen, Quintana Roo, México.
01/2009	School "Cosmology on the beach, essential cosmology for the next generation", Los Cabos, Baja California, México.
06/2007	Visiting at IEEC - Bellaterra, Universitat Autònoma de Barcelona (UAB) Bellaterra (Barcelona), Spain.
02/2007	Visiting at ASI Center of Matera, Italy, on VLBI interferometric techniques.
06/2006	Meeting on "Planck scale in Astrophysics and Cosmology", "La Sapienza" University, Rome, Italy.
06/2006	XI Marcel Grossmann Meeting, Berlin, Germany.
10-11/2006	Visiting at IEEC - Bellaterra, Universitat Autònoma de Barcelona (UAB) Bellaterra (Barcelona), Spain.
07/2005	Meeting "QFEXT'05" , Universitat Autònoma de Barcelona (UAB) Bellaterra (Barcelona), Spain.

SEMINARS

02/2015	Seminar: super-renormalizable gravity, VI Verão Cuantico, Physics Department, CCEN, João Pessoa, PB, Brazil.
12/2014	Seminar: non-local gravitational theories, workshop Integrable systems—continuous and discrete—and the transition to chaos. Centro Internacional de Ciencias Cuernavaca, México.
11/2014	Seminar: role of interactions in the condensation temperature of atomic condensates, Instituto de Investigaciones en Materiales, UNAM, Mexico City, Mexico.
11/2014	Seminar: on non-local theories of gravitation, school Group Theory and Knots, IIP, Natal, Brazil.
11/2014	Seminar: super-renormalizable gravity, UFPB, Joao Pessoa, Brazil.
11/12/2013	Seminar: higher derivatives modified gravity models, CBPF, Rio de Janeiro, Brazil.
19/06/2013	Seminar: effect of interactions in Bose-Einstein condensates, Physics Department, CINVESTAV-IPN, Mexico City, Mexico.
17/05/2013	Seminar: Einstein's gravity and Bose-Einstein condensates, the School of Physics of UIS University, Bucaramanga, Colombia.
2/07/2012	Seminar: Planck-scale effects on trapped Bose-Einstein's condensates, XIII Marcel Grossmann Meeting, Stockholm, Sweden.
26/02/2010	Seminar: quantum generation of dark matter and dark energy and unification with inflation, Physics and Mathematics Institute of the Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Michoacán, Mexico.
22-26/11/2010	Seminar: self-interacting complex scalar fields as dark-matter: a preliminary study, VIII Workshop of the Gravitational and Mathematical-Physics Division of the Mexican Physical Society", Tuxtla Gutierrez, Chiapas, Mexico.
11-15/01/2010	Seminar: quantum generation of dark energy, school Cosmology on the beach, Playa del Carmen, Q. Roo, Mexico.
6-12/12/2009	Seminar: quantum generation of dark energy, VIII Mexican School of the Gravitational and Mathematical-Physics Division of the Mexican Physical Society, Playa del Carmen, Q. Roo, Mexico.

REFERENCES

Persons familiar with my professional qualifications and personal character

Prof. Francesco Calogero
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- Professor
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Facultad de Ciencias, UNAM, Cd. de México, México

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Prof. Giovanni Amelino-Camelia
Università “La Sapienza”, Rome, Italy.

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Prof. José Abdalla Helayël-Neto
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IEEC, Barcelona, Spain.

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Prof. Yeinzon Rodriguez
• Escuela de Física, Universidad Industrial de Santander, Bucaramanga, Colombia.
Email: yeinzon.rodriguez@uan.edu.co

Prof. Carlo Baccigalupi
SISSA, Trieste, Italy.
• Ph.D. Thesis referee.
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Prof. Daniela Giachetti
• Università “La Sapienza”, Rome, Italy.
Email: daniela.giachetti@dmmm.uniroma1.it

LANGUAGES

Italian	mother tongue
English	fluent
Spanish	fluent
Portuguese	beginner