

Curriculum vitae et studiorum

Orchidea Maria Lecian

Sapienza University of Rome,
Faculty of Medicine and Pharmacy
Piazzale Aldo Moro, 5 - 00185 Rome, Italy.

Sapienza University of Rome,
ICRA- International Center for Relativistic Astrophysics,
Physics Department
Piazzale Aldo Moro, 5- 00185 Rome, Italy.

Comenius University in Bratislava,
Faculty of Mathematics, Physics and Informatics,
Department of Theoretical Physics and Physics Education- KTFDF,
Mlynská Dolina F2, 842 48, Bratislava, Slovakia.

Research interests

General Relativity; Astrophysics; Relativistic Astrophysics; Cosmology; Early Cosmology; Applied Instrumentation; Comparative Instrumentation; Galactic Physics and Astrophysics; Extra-Galactic Physics and Astrophysics; Extragalactic Optical Systems; Quantum Systems; Quantum Devices; Differential Geometry; Operator Algebras; Mathematical Physics; Quantum Gravity; Quantum Cosmology; Differential Geometry; Group Theory; Mathematics; Applied Mathematics; Calculus and Analysis; Algebraic Geometry; Satellite Experimentation; Planetology; Dark Matter; Modified Theories of Gravity; Dark Matter; Black-hole Physics; Particle Physics; Field Theory; Quantum Field Theory; Statistics; Probability; Physics; applied Physics; Mathematics; Mathematical Physics; Applied Mathematics; Engineering; Applied Engineering; Computer Science; Applied Chemistry.

<https://elearning.uniroma1.it/course/search.php?search=lecian>

<https://elearning.uniroma1.it/enrol/index.php?id=8337>

<https://elearning.uniroma1.it/course/info.php?id=6109>

<https://gomppublic.uniroma1.it/Docenti/Render.aspx?UID=935baecf-0c11-487a-b5a7-122107679c7c>

<https://elearning2.uniroma1.it/course/search.php?search=lecian>

https://www.scholarships.sk/_user/documents/NSP/V%C3%BDsledky%20v%C3%BDberov%C3%BD%20konan%C3%AD/zahranicni/NSP_zahr_2017_04_30.pdf

<https://publons.com/researcher/1517411/orchidea-maria-lecian/>

other websites

https://www.slideshare.net/orchidealecian?utm_campaign=profiletracking&utm_medium=sssite&utm_source=ssslideview

other bibliographical indices:

<https://orcid.org/0000-0002-9417-5578>

Jan-Jun 2016 Convalescent for orthopaedics

Academics

15 September 2020- 31 January 2022: **Sapienza University of Rome**, Facoltà di Medicina e Farmacia, Professorship Mathematics and Selected Topics in Computer Science, Faculty Member.

15 September 2019- 31 January 2021: **Sapienza University of Rome**, Facoltà di Medicina e Psicologia, Professorship Applied Physics, Faculty Member.

Academic Years 2017-2018- 2019: **Sapienza University of Rome**, DICEA- Department of Civil, Constructional and Environmental Engineering, Faculty of Civil and Industrial Engineering

Sapienza University of Rome, Professorship L23 Fundamentals of Physics, <Faculty Member.

2 Jun 2018- 15 October 2018: The National Scholarship Programme of the Slovak Republic (NS'P)

SAIA (Slovak Academic Information Agency) Grant for International University Researchers

Comenius University, Bratislava,

Faculty of Mathematics, Physics and Informatics, Department of Theoretical Physics and Physics Education- KTFDF,

Research title: Possible deformations of General Relativity

Erasmus Programme Lecturer.

Research Supervisor: Prof. Vladimir Balek.

1 September 2017- 15 February 2018: The National Scholarship Programme of the Slovak Republic (NS'P)

SAIA (Slovak Academic Information Agency) Grant for International University Researchers

Comenius University, Bratislava,

Faculty of Mathematics, Physics and Informatics, Department of Theoretical Physics and Physics Education- KTFDF,

Research title: Possible deformations of General Relativity

Erasmus Programme Lecturer (not activated).

Research Supervisor: Prof. Vladimir Balek.

2013- 2014: **Sapienza University of Rome**, Physics Department and ICRA- International Center for Relativistic Astrophysics, Rome, Italy

Cosmology and Quantum Gravity;

Postdoctoral Research Fellowship (Assegno di Ricerca Cat. A);

Research Project: Classical and Quantum Features of the Primordial Universe;

Supervisor: Prof. Paolo de Bernardis.

1 August 2011- 30 April 2013: **Sapienza University of Rome**, Physics Department and ICRA- International Center for Relativistic Astrophysics, Rome, Italy
Astrophysics, Early Cosmology;
Supervisor: Prof. Giovanni Montani, Prof. R. Capuzzo-Dolcetta.

1 May 2010 -March 2011: **IHES- Institut des Hautes Études Scientifiques**- Bures sur Yvette, France
Gravitation;
Supervisor: Prof. Thibault Damour.

1 January 2009 -30 April 2010: **IHES- Institut des Hautes Études Scientifiques**, Bures-sur-Yvette, France, and **APC- AstroParticules et Cosmologie**, Paris, France
Gravitation and Cosmology; Supervisor: Prof. Thibault Damour.

Intensive Research Programs

14- 20 June 2015:
The Fields Institute for Research in Mathematical Sciences, Toronto, Canada,
Focus Program on 100 Years of General Relativity,
Singularities in General Relativity.

1 May 2013-31 July 2013:

AEI-MPI Max Planck Institute for Gravitational Physics-Albert Einstein Institute, Potsdam- Golm, Germany

Quantum Gravity and Unification Theories Division;

Research Project: Reflections on the Hyperbolic Plane;

Supervisor: Prof. Hermann Nicolai.

1 April- 31 July 2011:

AEI MPI- Max Planck Institute for Gravitational Physics-Albert Einstein Institute, Potsdam- Golm, Germany

Quantum Gravity and Unification Theories Group;

Supervisor: Prof. Hermann Nicolai.

Academic Appointments

Master's Degree Research Thesis Advisor (Correlatore tesi di laurea specialistica)

2014: for the student L. Cesarini *Deformed Relativistic Transformations for Loop Quantum Gravity*, (graduated Sapienza December 2014);
Advisor (Relatore): Prof. G. Amelino-Camelia.

2012: for the student Riccardo Moriconi *Quantum implementation of the Mixmaster universe in the polymer representation*, (graduated Sapienza December 2012);
Advisor (Relatore): Prof. G. Montani.

2011: for the student Donatella Fiorucci *Power-law modification of the Einstein-Hilbert Lagrangian for gravity: the propagation of gravitational waves* (graduated Sapienza June 2011);
Advisor (Relatore): Prof. G. Montani.

Bachelor's Degree Foundational Dissertation Advisor (Correlatore dissertazione di laurea triennale)

http://www.cgwcollaboration.it/Didattica/CosmologiaPrimordiale/CosmologiaPrimordiale/cosmologia_primordiale_tesine.html
Topological and geometric aspects of the Schwarzschild spacetime

2011: for the student Federico Mogavero (graduated Sapienza September 2011);
Advisor (Relatore): Prof. G. Montani.

2010: for the student Stefano Iovieno, (graduated Sapienza July 2010);
Advisor (Relatore): Prof. G. Montani.

Professorships(Conferimento incarichi di insegnamento)

Sapienza University of Rome, Facoltà di Medicina e Psicologia,
Applied Physics.

Full Professor; Academic Year 2019/2021, Faculty member.

Sapienza University of Rome, DICEA (Department of Civil, Building and Environmental Engineering), Faculty of Civil and Industrial Engineering,
Fundamental of Physics.

Full Professor; Academic Year 2017/2018/2019, Faculty member.

Comenius University, Bratislava,
Faculty of Mathematics, Physics and Informatics,

1 September 2017- 30 June 2018

Lecturer- Erasmus Program- not activated.

Sapienza University of Rome, Dipartimento DIAEE (Department of Astronautics Engineering, Electric and Energetics), Faculty of Civil and Industrial Engineering,
Fundamentals of Physics I, Academic Year 2016-2017.

(assegno per lo svolgimento di attività didattiche integrative); Faculty: Prof. Stefano Atzeni- 30 hours.

Sapienza University of Rome, Dipartimento DIAEE (Department of Astronautics Engineering, Electric and Energetics), Faculty of Civil and Industrial Engineering,
Geometry, Academic Year 2016-2017.

(assegno per lo svolgimento di attività didattiche integrative); Faculty: Prof. Paolo Maroscia- 30 hours.

Sapienza University of Rome, Dipartimento SBAI (Department of Fundamental Sciences and Engineering), Faculty of Civil and Industrial Engineering,
Calculus and Analysis II, Academic Year 2014.

(assegno per lo svolgimento di attività didattiche integrative); Faculty: Prof. Raffaella Capitanelli- 48 hours.

Sapienza University of Rome, Dipartimento SBAI (Department of Fundamental Sciences and Engineering), Faculty of Civil and Industrial Engineering,
Geometry, Academic Year 2014- 48 hours.

(assegno per lo svolgimento di attività didattiche integrative); Faculty: Prof. Stefano Capparelli.

Sapienza University of Rome, Dipartimento SBAI (Department of Fundamental Sciences and Engineering), Faculty of Civil and Industrial Engineering,
Probability, Academic Year 2014- 48 hours.

attività didattiche integrative); Faculty: Prof. Mirko D'Ovidio.

Sapienza University of Rome, Dipartimento SBAI (Department of Fundamental Sciences and Engineering), Faculty of Civil and Industrial Engineering, *Mathematical Physics*, Academic Year 2014 (declined for incompatibility with the main appointments), attività didattiche integrative); SBAI (Department of Fundamental Sciences and Engineering).

Sapienza University of Rome, Physics Department, unpaid work: lectures *Modified Theories of Gravity* for the course Early Cosmology, Academic year 2008. attività didattiche integrative); Faculty: Prof. G. Montani (unpaid work).

Teaching assistant

<http://www.dmmm.uniroma1.it/~raffaela.capitanelli/programmadedettagliato2AR0708.pdf> attività didattiche integrative); Theaching Assistant; Collaboration contract by University Sapienza as teaching assistant (50 hours) of Prof. R. Capitanelli for the lectures "Fundamentals of Calculus and Analysis", Architecture Department, Sapienza.

Professor Training Courses- Corsi di aggiornamento

6-11 July 2020: Training Course Sapienza FORUM PA online: Innovation and digital transformation as a response to the crisis, Sapienza University of Rome, Rome, Italy (Corso obbligatorio online Sapienza FORUM PA 2020- Innovazione e trasformazione digitale come risposta alla crisi, Sapienza University of Rome, Rome, Italy).

October-December 2019: Online Training Course for Professors: Privacy- European Regulations; Score 100/100 (CORSO OBBLIGATORIO ON-LINE per Professori Sapienza: Privacy- Regolamento Europeo Sapienza. Score 100/100).

PhD

1 November 2005- 21 January 2009, **PhD** in Physics, **Sapienza University of Rome**, Physics Department and ICRA (International Center for Relativistic Astrophysics)- (**International Relativistic Astrophysics PhD**¹, 'XXI ciclo'). PhD Thesis: "Modern approaches to generalized theories of gravity". Supervisor: Prof. G. Montani.

¹ **Graduate Schools**

11-20 November 2007: "*Central European School in Particle Physics*", Charles University, Prague, Czech Republic;

28 November-17 December 2006: "*Gravitational Waves, Relativistic Astrophysics and Cosmology*", Centre Emil Borel, Institut Henri Poincaré, Paris, France.

Qualifying Graduate lectures

Spring-Summer 2008: "*Early Cosmology*", Prof. G. Montani, Sapienza, Physics Department;

Spring-Summer 2007: "*Phenomenology of the Standard Model and its Supersymmetric extensions*", Prof. E. Franco, Prof. Silvestrini, Sapienza, Physics Department;

Autumn 2006: "*Riemannian Geometry*", Prof. S. Marchiafava, Sapienza, Mathematics Department;

Autumn 2006: "*Group representation theory*", Prof. C. De Concini, Sapienza, Mathematics Department;

Spring 2006: "*Geometrodynamics and matter fields*" Prof. G. Montani, Sapienza, Physics Department;

January 2006: "*Mathematical Problems Of General Relativity Theory*", Prof. D. Christodoulou, ETH, Zurich, Switzerland;

Autumn 2005: "*An introduction to Quantum Gravity*", Prof. G. Amelino-Camelia, Sapienza, Physics Department.

Undergraduate

October 1999-14 July 2005: **Sapienza University of Rome**-Physics Department and ICRA (International Center for Relativistic Astrophysics)- **University Degree in Theoretical Physics**², (Laurea in Fisica, vecchio ordinamento, indirizzo teorico generale), 110/110. Laurea Thesis "On the geometrization of the electro-weak model by a 5-dimensional gauge theory of the Lorentz group within a Kaluza-Klein scheme". Supervisors: Prof. Remo Ruffini, Prof. Giovanni Montani.

September 1994- 16 July 1999: **High School** "Convitto Nazionale Vittorio Emanuele II" Rome, Italy (**GCE Advanced Level**'Maturità Classica Europea'), 100/100. Equivalent diploma acknowledged by French Embassy, Rome.

September 1994- 16 July 1999: **High School** "Convitto Nazionale Vittorio Emanuele II" Rome, Italy (**GCE Advanced Level**'Maturità Classica Europea'), 100/100. Equivalent diploma acknowledged by French Embassy, Rome

² **Qualifying undergraduate exams:**

"*Theoretical Physics III*" Prof. N. Cabibbo,

"*Field theory*", Prof. M. Testa,

"*General Relativity*", Prof.V. Ferrari,

"*Disordered Systems*", Prof.E. Marinari,

"*Quantum mechanics*", Prof. S. Doplicher.

Seminars

VIA Astroparticle Physics Forum Lecture COSMOVIA, 20 June 2020
About Fractons: further investigations- several models.

VIA Astroparticle Physics Forum Lecture COSMOVIA, 06 June 2020
About Fractons- further investigations.

VIA Astroparticle Physics Forum Lecture COSMOVIA, 30 May 2020
Some aspects of Fractons.

Invited Seminars

VIA Astroparticle Physics Forum Seminar COSMOVIA, 28 March 2020
Technicalities about the LHAASO experiment
Astroparticle Physics Forum [www. cosmovia.org](http://www.cosmovia.org)
http://viavca.in2p3.fr/2010c_o_s_m_o_v_i_a_forum_s_d24fsdf4zerfze5f4ze5f4dsq34sdteerui45_788789745rt7yr68t4y54865h45g4hfg56h45df4h86d48h48t7uertujirjtiorjhuiofgrdsqgxcvfg5h40yhuyir/viewtopic.php?f=73&t=3705&sid=c56cbf76f87536fc4c3ff216d9edaba2mkj.

ICRANeT- International Center for Relativistic Astrophysics Network, Pescara (Italy), 7 November 2019
Quantum-systems investigations vs optical-systems ones.

Comenius University of Bratislava, Bratislava (Slovakia), 5 December 2017
Analytical expressions for the generic cosmological solution: the limits to the Bianchi solutions.

Bristol University, Bristol (UK), 22 January 2014
Scars in Cosmological Billiards: Mathematical Characterization and Observational Perspectives.

AEI- MPI Max Planck Institute for Gravitational Physics - Albert Einstein Institute, Potsdam-Golm (Germany), 10 June 2013
Recent developments in cosmological billiards.

Turin University, Turin (Italy), 28 May 2013
Cosmological billiards in $4 = 3 + 1$ dimensions: statistical maps and their quantum version.

Sapienza University of Rome, Rome (Italy), 3 May 2013
Statistical maps for cosmological billiards.

Norwegian University of Science and Technology, Trondheim (Norway), 7 July 2011

Statistics and Geometry of Cosmological Billiards.

Sapienza University of Rome, Rome (Italy), 30 September 2010

Sulle proprietà dei biliardi cosmologici.

APC- Astroparticules et Cosmologie, Paris (France), 22 April 2010

Some further investigation on the BKL paradigm.

Trento University, Trento (Italy), 14 May 2009

The Taub Universe: Polymer Quantum Dynamics.

Group Seminars

Max Planck Institute for Gravitational Physics -Albert Einstein Institute, Potsdam- Golm (Germany), 4 May 2011, Cosmology Group Seminar: Informal chat about BKL universes.

Sapienza University of Rome, Rome (Italy), 30 September 2013
Quantum Gravity Seminar: *Some semiclassical features of anisotropic cosmologies.*

Sapienza University of Rome, Rome (Italy), 16 March 2017
Quantum Gravity Seminar: *Feasibility Study: the semiclassical limit approaches for quantum theories of gravity.*

PhD Seminars Journal Club

25 January 2008 : *Polymer representation and GNS construction: fundamentals and applications*

30 March 2007 : *An introduction to spin foams*

23 May 2006 : *Functional approach to quantum gravity*

11 April 2006 : *Generalized uncertainty principle, noncommutative spacetime and the scalar field*

http://www.icra.it/cgm/main%20page/proceedings_CGM/lecian_cgm.pdf

http://www.icra.it/cgm/main%20page/sem_teach.html

Talks at Meetings, Conferences, Workshops and Symposia

September 25-26, 2021, *Global Webinar on Laser, Optics and Photonics*, New developments of the Optical equivalence Theorem and applications, Bangalore, India; online.

September 22-23, 2021: *European Lasers, Photonics and Optics Technologies Summit-Elos 2021*, theme 'Multifaceted aspects of Lasers, Photonics and Optics technologies', Developments and applications of the optical equivalence theorem, Paris, France; virtual event.

July 5-11 2021: *24th International Workshop "What Comes Beyond the Standard Models?"*, Statistical analyses of antimatter domains, created by nonhomogeneous baryosynthesis in a baryon asymmetrical Universe, Bled, Slovenia.

February 22-28 2021: *1st Electronic Conference on Universe- S8. The Universe of Andrei Sakharov*, Studies of baryon-antibaryon annihilation in the evolution of antimatter domains in baryon-asymmetric Universe, online.

September 24-25, 2020: *Optics2020- Optics Virtual 2020 Theme: To disseminate knowledge on Lasers, Photonics and Optics Technologies*, Herndon, VA USA, Optics, Optical systems, further theoretical implementations of the optical Equivalence principle and spectral analyses.

September 7-11, 2020: *The Fourth Zeldovich virtual meeting*, Specific aspects of the evolution of antimatter globular cluster domains, Pescara, Italy.

July 09-13 2018: *Group32- The 32nd International Colloquium on Group Theoretical Methods in Physics*, Czech Technical University in Prague, Prague (Czech Republic), Modular structures and extended-modular-group- structures after Hecke pairs.

January 15-19 2018: *SBAI Geometry and Algebra Seminar Week*, Sapienza University of Rome, SBAI- Department of Basic Sciences and Applications for Engineering, Folding, tiling and tori: a Hamiltonian analysis.

September 18 - 25 2017: *School and Workshop on Mathematical Physics*, Stará Lesná, Slovakia, Advantages of quadratic quantization Techniques in the description of the present almost-flat spacetime.

10 - 17 September 2017: *Theoretical Physics Workshop and Summer School*, Svit, Slovakia, Imprints of the semiclassical phase of the evolution of the universe on modern

quantum-gravity measurements.

20-23 July 2015: *Quantum Gravity Meeting Rome 2015*, Deformations of the Hamiltonian Constraints in General Relativity.

12-18 July 2015: *Fourteenth Marcel Grossmann Meeting* University of Rome "La Sapienza" - Rome, The Hamiltonian constraint and its possible deformations An analysis of the symmetries of cosmological billiards

8-12 September 2014: *Conceptual and Technical Challenges for Quantum Gravity 2014*, Sapienza University of Rome, Italy, Non-trivial Momentum-Space structures for General Relativity: a quantum approach, Quantum maps and Hopf algebras for quantum General Relativity.

7-10 July 2014: *Mathematics Days in Sofia*, Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, Sofia (Bulgaria), Symposium Algebraic Methods in Quantum Field Theory, Weyl transformations for quantum and semiclassical Cosmological billiards.

23-29 June 2014: *Integrable systems and Quantum Symmetries*, Technical University, Prague (Czech Republic), Symmetries in the Quantum characterization of the Cosmological Singularity.

11-17 July 2010: *2nd Galileo-XuGuangqi Meeting*, Ventimiglia (Italy), "About the statistical properties of cosmological billiards".

- 12-18 July 2009: *Twelfth Marcel Grossmann Meeting on General Relativity*, Paris (France), "Comparison of the Cosmological Singularity in the Polymer and GUP Frameworks".

- 2 March 2009: *The Directions of Modern Cosmology*, Universitat Autònoma de Barcelona (Spain), "An example of $f(R)$ model passing Solar-System tests".

- 8-18 July 2008: *The III Stueckelberg Workshop*, Pescara (Italy), "Stueckelberg: a forerunner of Modern Physics III ", "Recent approaches to modified-gravity theories", "The Taub Universe viewed in a Polymer Quantization Approach".

- 24-29 September 2007: *XCIII Congresso Nazionale Società Italiana di Fisica*, Pisa (Italy), "Dark energy as a relic of the vacuum-energy cancellation".

- 3-8 September 2007: *II Stueckelberg Workshop*, Pescara (Italy), "Stueckelberg: a forerunner of Modern Physics II ", "Exponential Lagrangian for the gravitational field and the problem of vacuum energy", "Fundamental symmetries of the extended space-time".

- 20-30 July 2007: *4th Italian-Sino Workshop on Relativistic Astrophysics*, Pescara (Italy), "Scalar-tensor analysis of an exponential Lagrangian for the Gravitational Field".

- 25-30 June 2007: *10th Italian-Korean Symposium on Relativistic Astrophysics*, Pescara (Italy), "The role of torsion in fermion interactions".

-13-17 April 2007: *APS April Meeting*, Jacksonville (Florida, USA), "Lorentz Gauge Theory and its Phenomenological Implications".

- 18-23 September 2007: *XCII Congresso Nazionale Società Italiana di Fisica*, Turin (Italy), "The role of torsion within a gauge theory of the Lorentz Group".

- 23-29 July 2006: *Eleventh Marcel Grossmann Meeting on General Relativity*, Berlin (Germany), "Electro-Weak Model within a 5-dimensional Lorentz group theory".

-10-20 July 2006: *The third Italian-Sino Workshop on Relativistic Astrophysics*, Pescara (Italy), "Accelerated Universe from an exponential Lagrangian of the metric field".

-26 June-3 July 2006: *I Stueckelberg Workshop*, Pescara (Italy), "Stueckelberg: a forerunner of Modern Physics", "Electro-weak Model within the framework of Lorentz gauge theory: Ashtekar variables?".

- 5-16 February 2006: *The first Bego Scientific Rencontre*, Nice (France), "Lorentz gauge theories and the Electro-Weak model".

Posters at Meetings, Conferences and Workshops

June 18-20, 2018: *4th International Conference and Exhibition on Satellite and Space Missions*- Session: Shaping the Future with Latest Advancements in Satellite and Space Missions, Rome (Italy), E-poster: O.M. Lecian, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices.

Conferences

- 8-13 Aug 2021: *Symmetry 2021 - The 3rd International Conference on Symmetry*, online.

- 5-9 July 2021: *Sixteenth Marcel Grossmann Meeting on General Relativity*, Virtual Meeting.

- 29-30 March 2021: *Workshop on philosophy of dark matter*, University of Wuppertal, Wuppertal, Germany.

- 12-16 October 2020: *Mini-Course: An Introduction to Quantum Field Theory in Curved Spacetime*, London Mathematical Society webinar, Cardiff University, London, Cardiff, U.K.

- 10- 12 April 2019: *The fifth mini symposium of the Roman number theory association*, University of Rome RomaTre, Rome, Italy.

- 18- 20 April 2018: *The fourth mini symposium of the Roman number theory association*, University of Rome RomaTre, Rome, Italy.

-16- 17 April 2018: *11th Atelier PARI/GP*, University of Rome RomaTre, Rome, Italy.

-30 November- 1 December 2017: *201713th Central European Seminar on Particle Physics and Quantum Field Theory*, University of Vienna, Vienna, Austria.

- 4 — 8 September 2017: *29th Indian-Summer School of Physics, Topics in particle cosmology*, Prague, Czech Republic.

- 28-29 November 2013: *Geometry and Physics II*, Institut Henry Poincaré, Paris, France.

- 24-26 March 2010: *Colloque Lagrange*, IHES.

- 29 September-4 October 2008: *Quantum Spacetime and Noncommutative Geometry*, Sapienza.

- 19-20 June 2006: *Plank scale in astrophysics and cosmology*, Sapienza.

- 10-20 June 2005: *II Italian-Sino Workshop on Relativistic Astrophysics: Probing the Dark Universe*, Pescara (Italy);

- 27 June-1 July 2005: *The Russian-Italian Lifshitz-Zeldovich Meeting on Relativistic Astrophysics*, Pescara (Italy).

Professorship Training Courses- Corsi di Aggiornamento Professori

6-11 July 2020: Training Course Sapienza FORUM PA online: Innovation and digital transformation as a response to the crisis, Sapienza University of Rome, Rome, Italy (Corso obbligatorio online Sapienza FORUM PA 2020- Innovazione e trasformazione digitale come risposta alla crisi, Sapienza University of Rome, Rome, Italy).

October-December 2019: Online Training Course for Professors: Privacy: European

Regulations; Score 100/100 (CORSO OBBLIGATORIO ON-LINE per Professori Sapienza: Privacy- Regolamento Europeo Sapienza. Score 100/100).

Training Courses- Corsi di Aggiornamento

June 15 2021: Peer Review Excellence workshop, IOP Publishing, online. **Grants and Fellowships**

Pre-PhD grants

LNF- INFN (Laboratori Nazionali di Frascati- Istituto Nazionale di Fisica Nucleare) grant for newly- graduated people to pursue a 6- month research program (Borsa di studio per neolaureati, Bando n. 11343/2006), (the grant was awarded but not spent because of incompatibility with INFN PhD Fellowship).

PhD grants

INFN-LNF (Istituto Nazionale di Fisica Nucleare) PhD Fellowship (Bando n. 11360/06).

Graduate Schools Grants Borse di Studio Scuole di Dottorato frequentate Concesse dalle Istituzioni organizzatrici

- 11-20 November 2007: **Charles University**, Prague, Czech Republic; Grant: Central European School in Particle Physics.

- 28 November-17 December 2006: **Centre Emil Borel**, Institut Henri Poincaré, Paris, France; Grant: Gravitational Waves, Relativistic Astrophysics and Cosmology.

Research grants

Sapienza CUN 2 Rectoral Postdoctoral Research Grant for the year 2009 (Decreto Rettoriale 18/11/2008).

Fonadazione Angelo Della Riccia Postdoctoral Research Grant, 1 July 2009- 30 April 2010..

IHES (Institut des Hautes Etudes Scientifiques) post-doc Fellowship - Bures sur Yvette, France, April 2010 -February 2011.

Max Planck Society, 'Grant awarded to foreign postdocs', Potsdam-Golm, Germany, 1 April 2011- 31 July 2011.

Sapienza University of Rome: (Assegno di ricerca cat. A) Postdoctoral Research Fellowship 'Classical and Quantum Physics of the Primordial Universe, Physics Department, 1 September 2013-31 August 2014 (Fellowship cofunded by the Planck Mission

and Sapienza University).

Max Planck Institute- Albert Einstein Institute for Gravitational Physics : Post-doctoral Research Grant 'Reflections of the hyperbolic plane', Golm, Germany, 1 May 2013 - 31 July 2013.

The Fields Institute for Research in Mathematical Sciences, Toronto, Canada,
Invitation reimbursement- Focus Program on 100 Years of General Relativity
Singularities in General Relativity, 14- 20 June 2015.

The National Scholarship Programme of the Slovak Republic (NSP)
SAIA Grant for University Researchers
Comenius University, Bratislava,
Faculty of Mathematics, Physics and Informatics,
1 September 2017- 30 June 2018
Research title: Possible deformations of General Relativity.

Teaching contracts

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, Fa-
coltà di Medicina e Farmacia,
Mathematics and Fundamentals of Computer Science.
Full Professor; Academic Year 2020/2022, Faculty member.

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, Fa-
coltà di Medicina e Psicologia,
Applied Physics.
Full Professor; Academic Year 2019/2021, Faculty member.

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, DICEA
(Department of Civil, Building and Environmental Engineering), Faculty of Civil and
Industrial Engineering,
Fundamentals of Physics.
Full Professor; Academic Year 2017/2018/2019, Faculty member.

The National Scholarship Programme of the Slovak Republic (NSP)
SAIA Grant for University Researchers
Comenius University, Bratislava,
Faculty of Mathematics, Physics and Informatics,
1 September 2017- 30 June 2018
Lecturer- Erasmus Program- not activated.

Conferimento Incarico di Insegnamento retribuito **Sapienza University of Rome,**
SBAI (Department of Fundamental Sciences and Engineering): Professorship
Grant (assegno per lo svolgimento di attività didattiche integrative), Geometry, Aca-
demic Year 2013-2014.

Conferimento Incarico di Insegnamento retribuito **Sapienza University of Rome,**
SBAI (Department of Fundamental Sciences and Engineering): Professorship
Grant (assegno per lo svolgimento di attività didattiche integrative), Probability, Aca-

demic Year 2013-2014.

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, SBAI (Department of Fundamental Sciences and Engineering): Professorship Grant (assegno per lo svolgimento di attività didattiche integrative), Mathematical Physics, Academic Year 2013- 2014 (declined: grant awarded but not spent for incompatibility).

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, SBAI (Department of Fundamental Sciences and Engineering): Professorship Grant (assegno per lo svolgimento di attività didattiche integrative) , Fundamentals of Physics, Academic Year 2013 (declined: the grantee was classified but not appointed for incompatibility conditions).

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, SBAI (Department of Fundamental Sciences and Engineering) and Architecture Department: Professorship Grant (assegno per lo svolgimento di attività didattiche integrative), Academic year 2013/2014, Fundamentals of calculus and Analysis II.

Conferimento Incarico di Insegnamento retribuito Sapienza University of Rome, DIAEE (Department of Astronautics Engineering, Electrical and Energetics): Professorship Grant (assegno per lo svolgimento di attività didattiche integrative), Geometry, Academic Year 2016-2017.

Conferimento Incarico di Insegnamento retribuito **Sapienza University of Rome, DIAEE (Department of Astronautics Engineering, Electrical and Energetics)**: Professorship Grant (assegno per lo svolgimento di attività didattiche integrative), Fundamentals of Physics, Academic Year 2016-2017.

Sapienza University of Rome, Architecture Department: Graduate Lecture-ship Grant, Academic year 2007.

Competitions/Mention grants

Abstract mention eligible for partial fee-waiving for the E-poster competition

E-poster: O.M. Lecian, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices,

4th International Conference and Exhibition on Satellite and Space Missions- Session: Shaping the Future with Latest Advancements in Satellite and Space Missions, June 18-20 2018, Rome (Italy); <https://satellite.conferenceseries.com/eposter-presentation.php>

Abstract mention eligible for partial fee-waiving for the Poster competition

Poster: O.M. Lecian, Identifying the events of singular-cosmologies cosmological origin in distinction of those from bouncing cosmologies within planet-based experiments: upper bounds and lower bounds for the discriminating terms in the spectral analysis

2nd International Earth Science and Global Geology Conference- (Earth Science-2018-Geoscience)- Theme: GEOLOGY (Structural Geology, Sedimentology, Geohydrology, Geochronology, Marine Geology, Environmental Geology, Palaeontology, Geology of Energy Resources: Uranium, Coal, Petroleum), , December 3-5, 2018Dubai (UAE), .

Research Consortia

ICRA- International Center for Relativistic Astrophysics.

The String Theory Universe COST Action

- European Cooperation in Science and Technology.

e-CA COST Action CANTATA

Cosmology and Astrophysics Network for Theoretical Advances and Training e-Actions
(CA15117)

Associate Editor

Open Access Journal of Engineering Sciences.

Editorial Board Committee

JPAA- Journal of Physics and Advanced Applications.

Editorial Board Member

SCIREA Journal of Mechanical Engineering (2018-ongoing).

The Open Conference Proceedings Journal (2017-ongoing).

The Open Mathematics, Statistics And Probability Journal, Editorial Board Member.

American Journal of Physics and Applications, Editorial Board Member (2014-2016).

Special Issue Editor

Galaxies MDPI, Special Issue 'Galaxies Observation and Theoretical Features'.

Special Issue Lead Editor

American Journal of Physics and Applications, Special Issue 'New Probes for New Physics'.

Editorial Advisory Board

Journal on Systemics, Cybernetics and Informatics (JSCI)

Editor - special issues 2017-2020

Journal on Systemics, Cybernetics and Informatics (JSCI)

Official Reviewer

The open Statistics & Probability Journal

Referee activity

Classical and Quantum Gravity,

Foundations of Physics,

EPJ C (European Physical Journal C),
SIGMA (Symmetry, Integrability and Geometry: Methods and Applications)
PLA (Physics Letters A)
Annals of Physics
Asian Journal of Physical and Chemical Sciences
Physical Review & Research International
Physical Science International Journal
Nuclear Physics, SciencePG
Applied Engineering, SciencePG
Mathematical and Computational Applications
Systems
Symmetry
Universe
Technologies
Galaxies
Journal of Advances in Mathematics and Computer Science
Information
Entropy
Asian Journal of Advanced Research and Reports
Asian Journal of Research and Review in Physics
Journal of Applied Physical Science International
Energies

Infrastructures

Particles

Symmetry

Physical Science International Journal

Annals of Physics

Asia-Pacific Conference on Applied Mathematics and Statistics

Asian Journal of Research and Review in Physics

Entropy

Current Journal of Applied Science and Technology

Particles

Universe

Advances in Research

American Journal of Physics and Applications

Applied Engineering

Asian Journal of Advanced Research and Reports

Asian Journal of Physical and Chemical Sciences

Asian Research Journal of Mathematics

Galaxies

Information

Journal of Advances in Mathematics and Computer Science

Journal of Applied Physical Science International

Journal of Geography, Environment and Earth Science International

Physics Letters A

Journal of Scientific Research and Reports

Journal of Energy Research and Reviews

Physical Science International Journal

Journal of Engineering Research and Reports

International Astronomy and Astrophysics Research Journal

Advances in Research

Mathematics MDPI

Galaxies MDPI

Applied Sciences MDPI

Symmetry MDPI

Molecules MDPI

2020 4th International Conference on Electrical, Automation and Mechanical Engineering (EAME2020)

2020 International Conference on Electronics, Automation and Communication Engineering (EACE2020)

AMS 2021- 2021 Asia-Pacific Conference on Applied Mathematics and Statistics 2020 International Conference on New Energy, Power and Environmental Engineering (NEPEE2020)

2020 International Workshop on Intelligent Computing, Communication and Data Engineering (ICCDE2020)

AMS 2020- 2020 2nd Asia-Pacific Conference on Applied Mathematics and Statistics
<https://publons.com/researcher/1517411/orchidea-maria-lecian/>

Further referee activity

[https : //publons.com/author/1517411/orchidea – maria – lecian](https://publons.com/author/1517411/orchidea-maria-lecian)[hashtag]profile

Also at- Website

<http://membership.sciencepublishinggroup.com/orchideamarialecian>

Conference Organization

Scientific Committee Member

ASTROMEET2022- International Meeting on Astronomy and Astrophysics
20-22 June 2022, Copenhagen, Denmark.

Organizing Committee Member

Global Summit on Gravitation, Astrophysics and Cosmology (GSGAC2022)
21-23 April 2022, Tokyo, Japan.

International Scientific Committees

2021 3rd International Conference on Computer, Communications and Mechatronics
Engineering (CCME2021)
December 17-18, 2021, Xiamen, China.

Organizing Committee Member

Physics and Astronomy World Forum

Theme: Advancing the Frontiers of Physics Knowledge to Explore the Dynamics of As-
tronomy
02-04 December 2021, Frankfurt, Germany.

Organizing Committee Member

8th Edition of Global Conference on Catalysis, Chemical Engineering and Technology-
Catalysis 2021
” as an Organizing Committee Member which is 27-29 September 2021, Paris, France.

Program Chair

Technical Committee Member

Editor

2021 International Conference on Energy, Environment, Epidemiology and Information
System (IC3EIS2021)
26-27 September 2021, Beijing, China.

Scientific board

Global Conference on Physics (Physics-2021)

Theme: Exploring the Innovations and Modern Break Troughs in the field of Physics
13-15 September 2021, Brussels, Belgium.

Scientific Board

Global Conference on Biomedical Engineering and Systems

Theme: Reshaping Technology Priorities in the Wake of Pandemic
22-24 July 2021, Barcelona, Spain.

TPC Member/Reviewer

2021 International Workshop on Environmental Science and Renewable Energy Engi-

neering (ESREE2021)
April 11-12 2021, Beijing, China.

TPC member
2021 6th International Conference on Education Reform and Modern Management (ERMM2021)
11-12 April 2021, Beijing, China.

Organizing Committee Member
Geoscience 2021- 6th International Conference on Geology and Earth Science
March 30, 2021, Virtual Conference.

General Chair and Editor
2021 6th International Conference on Green Materials and Environmental Engineering
(GMEE2021)
2-3 February 2021, Changsha, China.

/Reviewer
2020 International Conference on New Energy, Power and Environmental Engineering
(NEPEE2020)
20-21 December 2020, Xiamen, China.

TPC Member/Reviewer
2020 International Workshop on Intelligent Computing, Communication and Data Engineering (ICCDE2020)
22-23 November 2020, Beijing, China.

TC Member
2020 2nd International Conference on Biotechnology and Medical Engineering (ICBME2020)
22-23 November 2020, Beijing, China.

Organizing Committee Member
International Conference on Physics
October on 19-21, 2020, Rome, Italy.

Organizing Committee Member
5th International Conference on Geology and Earth Science
August 3-4, 2020, Paris, France.
International Technical Committee
2020 Asia-Pacific Conference on Applied Mathematics and Statistics (AMS 2020)
Feb 17-19, 2020, Sydney, Australia.

TPC member
2019 International Conference on Management, Economics and Social Science (ICMESS2019)
August 30 to 31, 2019, Changsha, China.

Organizing Committee Member
4th International Earth Science and Global Geology Conference
December 2-3, 2019, Kuala Lumpur, Malaysia.

TPC Member
2019 International Conference on Advanced Material Research and Processing Technology (AMRPT2019),
July 19-21, 2019, Wuhan, China.

Technical Program Committee member
2019 International Conference on Computer, Wireless Communication and Signal Processing (CWCSP2019),
July 19-21, 2019, Wuhan, China.
Technical Program Committee/Reviewer
2019 International Conference on Energy, Environmental and Civil Engineering (EECE2019)
June 23-24, 2019, Wuhan, China.

Technical Program Committee member
2019 International Conference on Social Science, Economics and Management Research (SSEMR2019),
May 26-27, 2019, Hangzhou, China.
Organizing Committee Member
Applied Physics 2019- 6th International Conference on Theoretical and Applied Physics,
May 16-17, 2019 Rome, Italy.

TPC member/reviewer
2019 International Conference on Education Reform, Management Innovation and Social Science (ERMIS2019),
March 24-25, 2019, Beijing, China.

Technical Program Committee
2019 International Conference on Computer Science, Communications and Big Data (CSCBD2019),
March 24-25, 2019, Beijing, China.

TPC member
2019 International Conference on Applied Mathematics, Modeling, Simulation and Optimization (AMMSO2019)
April 21-22 2019, Guilin, China.

General Chair/Technical Committee
The Second International Conference on Sustainable Energy, Environment and Information Engineering (SEEIE 2019),

24-25 March 2019, Beijing, China.

Technical Program Committee/Reviewer

2019 International Conference on Education, Management, Economics and Humanities (ICEMEH2019),

February 27-28, 2019, Shenzhen, China.

International Scientific Committee

2019 International Conference on Modeling, Simulation, Optimization and Numerical Techniques (SMONT2019),

February 27-28, 2019, Shenzhen, China.

International Scientific Committees/Technical Program Committee

2019 International Conference on Energy, Power, Environment and Computer Application (ICEPECA2019),

January 20-21, 2019, Wuhan, China.

Committees Member, 2019 International Conference on Education, Management and Information Technology Application (EMITA2019),

January 20-21, 2019, Wuhan, China.

TPC Member

2018 International Conference on Computer, Communications and Mechatronics Engineering (CCME2018),

December 22-23 2018, Shanghai, China.

International Scientific Committees

2018 International Conference on Electrical, Mechanical and Automation Engineering (EMAE2018),

December 22-23 2018, Shanghai, China.

TPC Member

2018 International Conference on Power, Energy and Materials Engineering (PEME2018),

December 22-23, 2018, Shanghai, China.

Committees member

2018 International Conference on Mathematics, Modeling, Simulation and Statistics Application (MMSSA2018),

December 22-23, 2018, Shanghai, China.

TPC member/reviewer

2018 International Conference on Energy, Power and Environmental System Engineering (ICEPESE2018),

November 25-26, 2018, Xiamen, China.

TPC member

2018 3rd International Conference on Applied Mechanics, Electronics and Mechatronics Engineering (AMEME2018),
November 25-26, 2018, Xiamen, China.

TPC member

Wireless Communication, Network, Information Technology 2018 (WCNIT2018)
25-26th Nov, 2018, Xiamen, China.

Editor General Chair of Technical Program Committee

Education Reform, Management and Applied Social Sciences (ERMASS2018)
October 28-29, 2018, Beijing, China.

TPC Member

2018 International Workshop on Wireless Communication, Network and Multimedia Engineering (IWWCNME2018),
October 28-29, 2018, Beijing, China.

Technical Programs Committees member

2018 4th International Conference on Applied Mechanics and Mechanical Automation (AMMA2018),
October 28-29, 2018, Beijing, China.

TPC Member

2018 International Conference on Information, Electronic and Communication Engineering (IECE2018),
October 28-29, 2018, Beijing, China.

Organizing Panel

3rd International Conference on Quantum Optics and Quantum Computing: Towards Full Stack of Computing and Optical Science in Quantum Era (OCM)
September 10-11, 2018 London, UK.

Organizing committee member

5th World Congress on Catalysis and Chemical Engineering (Catalysis 2018)
August 27-28, 2018 Tokyo, Japan.

Technical Program Committee/Reviewer

3rd International Conference on Control, Automation and Artificial Intelligence (3rd-CAAI 2018),
August 26-27, 2018, Beijing, China.

Technical Program Committee Member

2018 International Conference on Applied Mechanics, Mechatronics and Materials (AMMM2018)

August 26-27, 2018, Beijing, China.

Organizing Committee

5th Conference on New Advances in Condensed Matter Physics (NACMP 2018)

August 21-23, 2018, Kunming, China.

Technical Program Committee,

International Conference on Computer, Electronic Information and Communications 2018 (CEIC2018),

May 27-28, 2018, Sanya, China.

TPC member

2018 International Conference on Energy, Environment and Power Engineering (EEPE2018),

May 27-28, 2018, Sanya, China.

Scientific Committees, Reviewer Committee

8th International Advances in Applied Physics and Materials Science Congress and Exhibition (APMAS2018),

April 24-30 2018, Oludeniz, Fethiye/Mugla, Turkey.

Technical Program Committee, member

International Conference on Computer Modeling, Simulation and Algorithm (CMSA2018),

April 22-23, 2018, Beijing, China.

Technical Program Committee

International Conference on Education Reform and Management Science (ERMS2018),

April 22-23, 2018 in Beijing, China.

Technical Program Committee, member

International Conference on Electrical, Control and Mechanical Engineering (ECME2018),

April 22-23, 2018, Beijing, China.

International Scientific Committees

International Conference on Communication, Network and Artificial Intelligence (CNAI2018),

April 22-23 2018, Beijing, China.

Technical Program Committee, Chair

2nd International Conference on Electrical Engineering and Automation 2018 (ICEEA2018),

March 25-26, 2018, Chengdu, China.

Invited proceedings

OML, Gedanken tests for correlated Michelson interferometers, 2nd International Conference on Electrical Engineering and Automation 2018 (ICEEA2018).

Technical Program Committee, Member

2nd International Conference on Artificial Intelligence: Technologies and Applications (ICAITA2018),
March 25-26, 2018, Chengdu, China.

Conference Technical Committee
Asia-Pacific Conference on Applied Mathematics and Statistics (AMS2018)
March 23-26, 2018, Hanoi, Vietnam.

International Scientific Committees
International Conference on Computer Science, Electronics and Communication Engineering (CSECE2018),
February 7-8, 2018, Wuhan, China.

International Scientific Committee
2nd International Conference on Education, Management and Applied Social Science (EMASS2018),
February 7-8, 2018, Wuhan, China.

Technical Program Committee
International Conference on Mechanical, Automation and Applied Mechanics (MAAM2018)
February 7-8, 2018, Wuhan, China.

International Scientific Committees-Technical Program Committee
International Conference on Modeling, Simulation and Analysis (ICMSA2018)
February 7-8, 2018, Wuhan, China.

International Scientific Committees
2018 3rd International Conference on Education and Management Science (ICEMS2018),
January 21-22, 2018, Shenzhen, China.

Technical Program Committee/Reviewer
2017 International Conference on Computer, Mechatronics and Electronic Engineering (WCNE2017)
December 24-25, 2017, Xiamen, China.

International Scientific Committees
2017 Third International Conference on Humanity and Social Science (ICHSS2017)
December 24-25, 2017, Xiamen, China.

International Scientific Committees, member
2017 2nd International Conference on Electrical, Control and Automation Engineering (ECAE2017)
December 24-25, Xiamen, China.

Technical Program Committee, member
2017 2nd International Conference on Computer, Mechatronics and Electronic Engineering (CMEE2017)
December 24-25, 2017, Xiamen, China.

Technical Program Committee, member
2017 International Conference on Mathematics, Modeling and Simulation Technologies and Applications (MMSTA2017)
December 24-25, 2017, Xiamen, China.

International Scientific Committees, member
2017 3rd International Conference on Social, Education and Management Engineering (SEME2017)
November 26-27, 2017, Shanghai, China.

Technical Program Committee, member
2017 2nd International Conference on Applied Mechanics and Mechatronics Engineering (AMME2017)
November 26-27, 2017, Shanghai, China.

Technical Program Committee, member
2017 3rd International Conference on Artificial Intelligence and Industrial Engineering (AIIE2017)
November 26-27, 2017, Shanghai, China.

International Scientific Committees
2017 International Conference on Applied Mathematics, Modeling and Simulation (AMMS2017)
November 26-27, 2017, Shanghai, China.

Scientific Committee Member
International Conference on Mathematical Methods in the Sciences, Engineering and Technology (MAMESCET 2017)
December 16-17, 2017, Shenzhen, China.

Technical Program Committee, member
2017 2nd International Conference on Artificial Intelligence: Techniques and Applications (AITA2017)
September 17-18, 2017 Shenzhen, China.

TPC chair
2017 3rd International Conference on Green Materials and Environmental Engineering (GMEE2017)
October 22-23, 2017, Beijing, China.

International Scientific Committees: Technical Program Committee/Reviewer member
2017 2nd International Conference on Communications, Information Management and
Network Security(CIMNS2017)
October 22-23, 2017, Beijing, China.

Technical Program Committee chair
2017 Applied Mechanics, Electronics and Mechatronics Engineering (AMEME2017)
October 22-23, 2017, Beijing, China.

International Scientific Committees- Technical Program Committee
2017 2nd International Conference on Applied Mathematics, Simulation and Modelling
(AMSM2017)
August 6-7, 2017 in Phuket, Thailand

International Scientific Committees
2017 4th International Conference on Advanced Education Technology and Management
Science (AETMS2017)
September 17-18, 2017, Shenzhen, China.

Technical Program Committee member 2017 3rd International Conference on Applied
Mechanics and Mechanical Automation (AMMA2017)
August 6-7, 2017, Phuket, Thailand.

Technical Program Committee member
2017 4th International Conference on Education Reform and Modern Management (ERMM
2017)
August 6-7, 2017, Phuket, Thailand.

Technical Program Committee member
MCAE 2017 : 2017 2nd International Conference on Mechatronics, Control and Au-
tomation Engineering
September 17-18,2017,Shenzhen, China.

Technical Program Committee (TPC) member 2017 International Symposium on Ap-
plied Mathematics and Statistics (AMS 2017)
September 24-26, 2017 in Suzhou, China.

Technical Program Committee
Conference on Nuclear Science and Engineering (NSE2017)
October 20-22 2017, Guilin, China

Program Committee
The 8th International Conference on Advances in Physics (CAP 2017)
September 24-26 2017, Suzhou, China

International Scientific Committee
Technical Program Committee/Reviewer
2017 2nd International Conference on Modelling, Simulation and Applied Mathematics
(MSAM2017)
March 26-27 2017, Bangkok, Thailand

Computer skills

- Microsoft Windows, Office Package, LaTeX System;
- Problem-solving environments: Maple, Mathematica, Matlab.

Citizenships

Italian, Czech.

International Tests:

2 December 2005: took the TOEFL (ibt). Score earned (108/120).

5 November 2005: took the GRE general test (cbt): verbal ability 590/800, quantitative ability 750/800, analytical writing 4.5/6.0.

Languages

Native: Italian.

Foreign languages: English, fluent; French, fluent; German, intermediate level; Slovak, intermediate level.

Education- spare time

2017 Language School: Armenian

Personal skills

6-11 July 2020: Training Course Sapienza FORUM PA online: Innovation and digital transformation as a response to the crisis, Sapienza University of Rome, Rome, Italy (Corso obbligatorio online Sapienza FORUM PA 2020- Innovazione e trasformazione digitale come risposta alla crisi, Sapienza University of Rome, Rome, Italy).

October-December 2019: Online Training Course for Professors: Privacy- European Regulations; Score 100/100 (CORSO OBBLIGATORIO ON-LINE per Professori Sapienza: Privacy- Regolamento Europeo Sapienza. Score 100/100).

Volunteering- Spare time- Personal skills

(Volontariato) Association of the Armenian Community of Rome and Lazio: Councilor February 2017- February 2018 (elected). (Associazione della Comunità Armena di Roma e del Lazio (Assoarmeni): February 2017- February 2018 (elected)).

Publication list

Books

F. Cianfrani, O.M. Lecian, M. Lulli, G. Montani, Canonical Quantum Gravity: Fundamentals and Recent Developments, World Scientific Publishing, Singapore, 2013.

Agreed Contract: O.M.Lecian, Modified dispersion relations for non-thermodynamical Universe patches, Labert Academic Publishing SIA OmniScriptum Publishing, Riga, Latvia, 2018.

Research Papers

OML, M. Yu. Khlopov, Analyses of specific aspects of the evolution of antimatter globular clusters domains, Astronomy Reports, in press.

M. Yu. Khlopov, OML, Effects of Baryon-Antibaryon Annihilation in the Evolution of Antimatter Domains in Baryon Asymmetrical Universe, Phys. Sci. Forum 2021, 2(1), 31.

OML, Estimations of the Optical Equivalence Theorem for Opto-Mechanical Systems for Investigation in General Relativity and High-Energy Physics, Computation 8(3), 60 (2020).

A. A. Kirillov, E. P. Savelova, OML, On generation of a stochastic GW background by the scattering on relic wormholes, Eur.Phys.J.C 81, 263 (2021) 3.

OML, A More Suitable Definition of Quadratic Surds, The Open Mathematics, Statistics and Probability Journal 10, 8-20 (2020).

Vladimír Balek, OML, Remarks on the Bojowald-Paily paper Deformed general relativity, [arXiv:1810.05469].

Vladimír Balek, OML, Acta Physica Universitatis Comenianae, LIV (2019) 81 [arXiv:1806.04257].

OML, Geometry of the generical cosmological solution before the singularity limit, submitted to Journal of Geometry and Physics [arXiv:1711.07091].

OML, A more suitable definition of quadratic surds, submitted to Rivista Matematica Univ. Parma.

G. Amelino-Camelia, M.M. Da Silva, M. Ronco, L. Cesarini, OML, Spacetime-noncommutativity regime of loop quantum gravity, Phys. Rev. D 95, 024028 (2017), [arXiv:1605.00497].

OML, Cosmological-Billiards Groups and self-adjoint BKL Transfer Operators, under revision on JHEP [arXiv:1507.07085].

OML, G. Montani, R. Moriconi, Semiclassical and quantum behavior of the Mixmaster model in the polymer approach, Phys. Rev. **D 88** 103511 (2013) [arXiv:1311.6004].

OML, Periodic orbits in cosmological billiards: the Selberg trace formula for asymptotic Bianchi IX universes, evidence for scars in the wavefunction of the quantum universe and large-scale structure anisotropies of the present universe [arXiv:1311.0488].

OML, Stochastization of BKL dynamics and Anisotropic Sky Patterns [arXiv:1310.7544], under author's revision to Phys. Rev. D.

OML, BKL maps and Poincaré sections Phys. Rev. **D 88** 104014 (2013) [arXiv:1304.4973].

OML, Reflections on the hyperbolic plane Int. J. Mod. Phys.**D. 22** 1350085 (2013) [arXiv:1303.6343].

OML, G. Montani and N. Carlevaro, Novel Analysis of Spinor interactions and non-Riemannian geometry, EPJ Plus **1281350085** 19 (2013) [arXiv:1301.7708].

D. Fiorucci, OML, G. Montani, Non-analytical power law correction to the Einstein-Hilbert action: gravitational wave propagation, Mod. Phys. Lett. **A 29**, 1450178 (2014) [arXiv:1108.0081].

T. Damour, OML, About the Statistical Properties of Cosmological Billiards, Int.J.Mod.Phys.**Conf.S 12** 121350085 90-99 (2012) (Proceedings of Second Galileo-Xu Quangqi meeting) [arXiv:1103.0179].

T. Damour, OML, Statistical Properties of Cosmological Billiards, Phys. Rev. **D 83** 044038 (2011) [arXiv:1011.5797].

T. Damour, OML, On the Gravitational Polarizability of Black Holes, Phys. Rev. **D 80** 044017 (2009) [arXiv:0906.3003].

OML, G. Montani, Implications of non-analytic $f(R)$ gravity at Solar-System scales, Class. Quant. Grav. **26** 045014 (2009) [arXiv:0807.4428].

M.V. Battisti, OML, G. Montani, Polymer Quantum Dynamics of the Taub Universe, Phys. Rev. **D 78** 103514 (2008) [arXiv:0806.0768].

OML, G. Montani, Riemannian and non-Riemannian extensions of geometrodynamics versus Einsteinian gravity, JKPS **56** 1653 (2010) [arXiv:0712.3726].

N. Carlevaro, OML, G. Montani, Fermion dynamics by internal and Space-time Symmetries, Mod. Phys. Lett. **A 24**, 415 (2009) [arXiv:0903.4124].

S. Casanova, OML, G. Montani, R. Ruffini and R. Zalaletdinov, A generalization of Schouten classification for non-Riemannian geometries with asymmetric metric, Mod. Phys. Lett. **A 23** 17 (2008) [arXiv:0712.3716].

F. Cianfrani, OML and G. Montani, Fundamentals and recent developments in non-perturbative canonical Quantum Gravity [arXiv:0805.2503].

OML and G. Montani, Dark Energy as Relic of the Vacuum Energy Cancellation?, Int. J. Mod. Phys. **D 17** 111 (2008)[arXiv:0709.1400].

OML and G. Montani, On the Kaluza-Klein geometrization of the Electro-Weak model within a gauge theory of the 5-dimensional Lorentz group, Int. J. Mod. Phys. **D 15** 717 (2006) [arXiv:gr-qc/0602024].

OML and G. Montani, Scalar-tensor analysis of an exponential Lagrangian for the Gravitational Field, AIP Conference Proceedings, 966 Relativistic Astrophysics: **4** The Italian-Sino Workshop, p.264 [arxiv: 0710.0544] (refereed).

OML and G. Montani, Electro-weak Model within the framework of Lorentz gauge theory: Ashtekar variables?, - Nuovo Cim. **B 122** 207 (2007) [arXiv:gr-qc/0702026].

F. Cianfrani and OML, Stueckelberg: a forerunner of Modern Physics, Il Nuovo Cim. **B 122** 123 (2007)[arXiv:physics/0701340].

N. Carlevaro, OML, and G. Montani, Lorentz Gauge Theory and Spinor Interaction, Int. J. Mod. Phys. **A 23** 1248 (2008) [arXiv:0801.4242].

OML and G. Montani, Fundamental symmetries of the extended space-time, Int. J. Mod. Phys. **A 23** 1266 (2008)[arXiv:0803.1629].

OML and G. Montani, Exponential Lagrangian for the gravitational field and the problem of vacuum energy, Int. J. Mod. Phys. **A 23** 1286 (2008) [arXiv:0803.1620].

F. Cianfrani and OML, Stueckelberg: a forerunner of Modern Physics II, Int. J. Mod. Phys. **A 23** 1105 (2008)[arxiv:0803.1583].

Invited conference contributions

OML, Gedanken tests for correlated Michelson interferometers, TPC Chair invited contribution proceeding, 2018 International Conference on Advanced Electrical Engineering and Automation (AEEA2018), Atlantis Press, Series: Advances in Intelligent

Systems Research. [arxiv:1806.05498].

Proceedings

M.Yu. Khlopov, OML, Effects of Baryon-Antibaryon Annihilation in the Evolution of Antimatter Domains in Baryon Asymmetrical Universe, Proceedings of the 1st Electronic Conference on Universe, Physical Sciences Forum, 2021, 2(1), 31. 22-28/02/2021, online, <https://sciforum.net/manuscripts/9267/manuscript.pdf>.

M.Yu. Khlopov, OML, Analyses of specific aspects of the evolution of antimatter globular cluster domains, in Astronomy Reports, Proceedings of The Fourth Zeldovich virtual meeting, September 7-11, 2020, Minsk, Pescara, in press.

OML, Modular structures and extended-modular-group-structures after Hecke pairs, in Proceedings of Group32- The 32nd International Colloquium on Group Theoretical Methods in Physics Czech Technical University, 9th July 9-13 2018, Prague (Czech Republic) J.Phys.Conf.Ser. 1194 (2019) no.1, 012067 iv, arxiv:1810.00775 [math-ph].

L. Cesarini, OML, The Hamiltonian constraint and its possible deformations, in Proceeding of XIV Marcel Grossmann Meeting on General Relativity, Rome, July 2015, in preparation.

OML, An analysis of the symmetries of cosmological billiards, in Proceeding of XIV Marcel Grossmann Meeting on General Relativity, Rome, July 2015, in preparation.

M.V. Battisti, OML, G. Montani, Comparison of the Cosmological Singularity in the Polymer and GUP Frameworks, in Proceeding of XII Marcel Grossmann Meeting on General Relativity, Paris, June 2008, pp 1438- 1440 World Scientific.

M.V. Battisti, OML, G. Montani, Gup versus polymer quantum cosmology: the Taub model, in Proceedings of the 3rd Stueckelberg Workshop, July 2008, Pescara - Italy [arXiv:0903.3836].

OML, S. Mercuri and G. Montani, Is Torsion a fundamental physical field?, in Proceeding of XI Marcel Grossmann Meeting on General Relativity, Berlin, July 2006, pp 2668- 2670, World Scientific [arXiv:gr-qc/0702024].

OML and G. Montani, Electro-Weak Model within a 5-dimensional Lorentz group theory, in Proceeding of XI Marcel Grossmann Meeting on General Relativity, Berlin, July 2006, pp 1296-1298, World Scientific [arXiv:gr-qc/0702025].

Invited papers

M.Yu. Khlopov, OML, Baryon-antibaryon annihilation in the evolution of antimatter

domains in baryon-asymmetric Universe, Universe Special Issue Selected Papers from the 1st International Electronic Conference on Universe, Universe 2021, 7(9), 347..

OML, Alternative Uses for Quantum Systems and Devices, Symmetry 2019, 11(4), 462, Special Issue 'Cosmological Inflation, Dark Matter and Dark Energy'.

OML, Semiclassical length measure from a quantum-gravity wave function, Technologies 2017, 5(3), 56, Special Issue 'Quantum Gravity Phenomenology and Experimental Implications' [arXiv:1708.07895].

OML, Analyses of measures within the quadratic generic Heisenberg group, accepted for publication on Scirea Journal of Physics, December 2017, in press.

N. Carlevaro, OML and G. Montani, Macroscopic and microscopic paradigms for the torsion field: from the test-particle motion to a Lorentz gauge theory, Ann. Fond. L. de Broglie, 32 (2-3), 281-295 (2007) [arXiv:0711.3538].

Posters

E-poster: O.M. Lecian, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices, 4th International Conference and Exhibition on Satellite and Space Missions- Session: Shaping the Future with Latest Advancements in Satellite and Space Missions, June 18-20, 2018, Rome (Italy); <https://satellite.conferenceseries.com/eposter-presentation.php>

Book chapters

Cosmological Inflation, Dark Matter and Dark Energy, Orchidea Maria Lecian, Alternative Uses for Quantum Systems and Devices, pages 188-204, MDPI, Basel, Switzerland, 2019.

Satellite Conference Book-4th International Conference and Exhibition on Satellite and Space Missions Contribution: OML, Measuring gravity in the vicinity of the Earth: spectral analysis and related modular structures after further experimental devices, 2018, in press.

Invited discussions

OML, LHAASO Further references- part2: Further analyses about directional recoil, cross sections, galaxy Physics and experiment-optimizations techniques, 28 March 2020, VIA Astroparticle Physics Forum Seminar COSMOVIA,

Astroparticle Physics Forum [www. cosmovia.org](http://www.cosmovia.org)

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Proceeding of PhD Seminars Journal Club

OML, M.V. Battisti, Polymer representation and GNS construction: fundamentals and applications, 15 Jan. 08,

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Dispense del Corso- Assistantship

Analisi II

<http://www.dmmm.uniroma1.it/~raffaela.capitanelli/programmadedtagliato2AR0708.pdf>

Dispense del Corso- Professorship

OML, Fisica Applicata, Dispense del Corso, disponibili come da sito web Sapienza (2019-2021).

Abstracts booklets- Conferences booklets

22-28 February 2021, 1st Electronic Conference on Universe session The Universe of Andrei Sakharov, online, OML, Effects of baryon-antibaryon annihilation in the evolution of antimatter domains in baryon asymmetrical Universe, MDPI.

OML, Modular structures and extended-modular-group- structures after Hecke pairs, IOP Conference Series, Journal of Physics: Conference Series (JPCS), Proceedings of Group32- The 32nd International Colloquium on Group Theoretical Methods in Physics Czech Technical University, 9th July 9-13 2018, Prague (Czech Republic).

24-29 September 2007: XCIII Congresso Nazionale Società Italiana di Fisica, Pisa (Italy), Dark energy as a relic of the vacuum-energy cancellation.

18-23 September 2007: XCII Congresso Nazionale Società Italiana di Fisica, Turin (Italy), The role of torsion within a gauge theory of the Lorentz Group.

13-17 April 2007: American Physical Society April Meeting, Jacksonville (Florida, USA), Lorentz Gauge Theory and its Phenomenological Implications

Master Thesis- Tesi di Laurea Quadriennale

Sulla geometrizzazione del modello elettrodebole da una teoria pentadimensionale del gruppo di Lorentz nello schema di Kaluza-Klein, Sapienza, Rome, 14 July 2005.

Orchidea Maria Lecian; Relatore: Prof. Remo Ruffini, Prof. G. Montani.

PhD Thesis

Orchidea Maria Lecian, Modern approaches to generalized theories of gravity, Sapienza, Rome, 15 December 2008.

Relatore: Prof. G. Montani.