

CURRICULUM VITAE

SURNAME AND NAME	TRIGIANTE MARIO
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Nationality	Italian
Birth date	22/11/1970

Academic Position

Qualification/Title	Full Professor
University	Politecnico di Torino
Department	Applied Science and Technology
Academic Recruitment Field (" <i>Settore Concorsuale</i> ")	02/A2
Academic Discipline (" <i>Settore Scientifico Disciplinare</i> ")	FIS/02

Working experience

Dates	Since 31/12/2018
Name and address of the Employer	Politecnico di Torino
Position held	Full Professorship, FIS/02
Main activities/responsibilities	Research and teaching activities: two undergraduate courses of Classical Electromagnetism on a yearly basis and a PhD course "Group Theory and Some of its Applications". 7/2018 he is the Coordinator of the Board of the Doctorate School in Physics at Politecnico di Torino. I am a representative for Physics of the Didactic Commission of his Department.

Dates	From 1/2/2008 to 30/12/2018
Name and address of the Employer	Politecnico di Torino
Position held	Associate Professorship, FIS/02

	(confirmed in 1/2/2011)
Main activities/responsibilities	<p>Research and teaching activities. The teaching activities started in 2003 and comprise courses of General Physics given on a yearly basis. I also teach a PhD course "Group Theory and Some of its Applications" since 2008.</p> <p>From 2012 to 2016 I was member of "Collegio di Ingegneria Elettrica", since 2016 I am member of "Collegio di Ingegneria Chimica e dei Materiali".</p> <p>Since 2013 I am member of "Commissione Albi".</p> <p>Since 2012 I am member of "Collegio di Dottorato".</p> <p>In 2014 I was member of "Giunta di Dottorato".</p> <p>Since 2010 I have been a representative for Physics of the Didactic Commission of his Department.</p>

Dates	From Nov. 2003 to Dec. 2007
Name and address of the Employer	Politecnico di Torino
Position held	"Professore a contratto" (Temporary Professorship) within the program named "Rientro dei Cervelli" of the Ministry of Education, University and Research
Main activities/responsibilities	<p>Research and teaching activities. The teaching activities comprise courses of General Physics given on a yearly basis.</p> <p>The research activity from Nov. 2005 to Nov. 2006 was partly funded by the E.U. "M. Curie" grant ERG, contract n. MERG-CT-2005-513622, which I had won.</p>

Dates	From Nov. 2001 to Nov. 2003
Name and address of the Employer	Spinoza Institute of the Faculty of Physics and Astronomy (University of Utrecht)
Position held	E.U.-Marie Curie Fellow, under Marie Curie contract n. HPMF-CT-2001-01276.
Main activities/responsibilities	Research and teaching activities.

Dates	From Nov. 2000 to Nov. 2001
Name and address of the Employer	Spinoza Institute of the Faculty of Physics and Astronomy (University of Utrecht)
Position held	postdoc
Main activities/responsibilities	Research and teaching activities.

Dates	From Oct. 1997 to Sept. 2000
Name and address of the Employer	University of Wales Swansea
Position held	postdoc
Main activities/responsibilities	Research and teaching activities.

Education and Training

Date	Oct. 1997
Institution which issued the degree	ISAS-SISSA (Trieste)
Type of Degree awarded (only Bachelor's Degree, Master of Science's Degree, PhD)	PhD Degree in Particle Physics

Date	July 1994
Institution which issued the degree	Università degli Studi di Pisa
Type of Degree awarded (only Bachelor's Degree, Master of Science's Degree, PhD)	Laurea (MS degree) in Physics with full marks and honors (110 cum laude)

1. Scientific Activity

1.1 Overview of the scientific production

I have authored 97 papers on international peer-reviewed journals: 1 Physical Review Letters, 1 Physics Reports (single author on invitation), 34 JHEP, 30 Nuclear Physics B, etc.. I also have 3 chapters on books and 20 contributions to proceedings of national and international conferences (Marcel Grossmann Meeting, Ann Arbor Meeting, etc.). I have also authored 1 book which is now at its second edition.

The complete list of publications is given at the end of the curriculum vitae

1.2 Bibliometric indices

The data below refer to the 30/4/2019. We give below the total h-factor and number of citations, according to *INSPIRE* database (run by a collaboration of CERN, DESY, Fermilab, IHEP, and SLAC, see <http://inspirehep.net/>) and Google Scholar

- Hirsch factor (h-factor): **37** (INSPIRE), **38** (Google Scholar)
- total number of citations: **3696** (INSPIRE), **4528** (Google Scholar)

1.2 Below we list and discuss a selection of three most important outcomes/results of the research activity (bibliometric indices in the list below refer to 30/1/2018)

- A)** B. de Wit, H. Samtleben and M. Trigiante, "Magnetic charges in local field theory", JHEP 0509 (2005) 016 [doi:10.1088/1126-6708/2005/09/016] [Citations: 96 (SCOPUS), 105 (WOS), 184 (Google Scholar), 164 (INSPIRE); Journal IF and Ranking: 5.944 (InCites), 2.061 (Scimago)]

- B)** L. Andrianopoli, R. D'Auria, E. Orazi and M. Trigiante, "First order description of black holes in moduli space", *JHEP* **0711** (2007) 032 [doi:10.1088/1126-6708/2007/11/032] [Citations: 74 (SCOPUS), 77 (WOS), 114 (Google Scholar), 105 (INSPIRE); Journal IF and Ranking: 5.659 (InCites), 1.227 (Scimago)]
- C)** G. Dall'Agata, G. Inverso and M. Trigiante, "Evidence for a family of SO(8) gauged supergravity theories", *Phys. Rev. Lett.* 109 (2012) 201301 [doi:10.1103/PhysRevLett.109.201301] [Citations: 74 (SCOPUS), 72 (WOS), 97 (Google Scholar), 95 (INSPIRE); Journal IF and Ranking: 7.953 (InCites), 6.243 (Scimago)]

Description

My research activity in theoretical high energy physics can be mainly framed within the study of superstring theory as a promising candidate to a quantum theory of gravity. This theory indeed naturally provides a finite theoretical framework in which gravity can be unified with the other fundamental interactions and supersymmetry, which is a symmetry between bosons and fermions, is a key ingredient for its consistent definition. Its low energy dynamics is described by a supergravity theory, which contains Einstein's gravity and in which the invariance under general coordinate transformations results from the invariance under local, i.e. space-time dependent, supersymmetry transformations.

Superstring theory, in its various formulations, is defined perturbatively on certain space-time backgrounds and thus the derivation of phenomenological predictions from it is hampered by our incomplete knowledge of its non-perturbative properties. Supergravity, in this respect, represents the best handle we have on this "microscopic" theory and the main route for drawing observational predictions out of it: It is defined within the well established mathematical framework of field theory and allows to study the low-energy string dynamics around general solutions, including non-perturbative ones, in limits in which a consistent formulation of string theory is missing. In particular, as an effective field theory, it captures the full non-linear low-energy dynamics of the superstring low-lying models.

This is one of the reasons why I have focused, in my research, mainly on the study of supergravity theories and their physical content, as a route to understating the non-perturbative properties of superstring theory.

My research activity and my expertise have considerably benefitted from my working experience in the supergravity group of Turin and in particular with Prof. P. Frè and Prof. R. D'Auria who have been among the main developers of supergravity. It has also benefitted from my ongoing collaboration, which started in the late nineties, with Prof. S. Ferrara at CERN, who is one of the inventors of supergravity, and from my experience as a postdoc abroad which gave me the unique opportunity to learn new ideas, techniques and approaches to the subject: During my 3-year stay in the University of Wales Swansea, I could interact with Prof. D.I. Olive, Dirac medal, who was a world leading expert of electric-magnetic duality and solitons in gauge theories and one of the developers of superstring theory. During my 3-year appointment at the Spinoza Institute in Utrecht I considerably benefitted from the interaction with Prof. G. 't Hooft, Nobel Laureate, and Prof. B. de Wit, who is one of the world leading experts and developer of supergravity.

Let me illustrate here my main research achievements, represented by the works A), B), C).

A) DEVELOPING A NEW DUALITY COVARIANT FORMULATION OF SUPERGRAVITY

I developed in various collaborations [F. Cordaro, P. Fre, L. Gualtieri, P. Termonia and M. Trigiante, *Nucl. Phys. B* 532 (1998) 245; B. de Wit, H. Samtleben and M. Trigiante, *Nucl. Phys. B* 655 (2003) 93; B. de Wit, H. Samtleben and M. Trigiante, *Phys. Lett B* 583 (2004) 338; B. de Wit, H. Samtleben and M. Trigiante, *Nucl. Phys. B* 716 (2005) 215; **B. de Wit, H. Samtleben and M. Trigiante, *JHEP* 0509 (2005) 016; B. de Wit, H. Samtleben and M. Trigiante, *JHEP* 0706 (2007) 049**], the embedding tensor formulation of four-dimensional supergravity. This is the most general formulation of a supergravity

theory which describes the low-energy dynamics of superstring theory realized on a generic space-time background. The key ingredient of this formulation is the embedding tensor : a constant quantity which, by definition, is covariant with respect to a characteristic global symmetry group G of the theory which encodes all known superstring dualities. These dualities are correspondences between different superstring theories of various backgrounds which hint towards the existence of a unifying (yet unknown) fundamental quantum theory of which the known superstring theories are but perturbative realizations. Having therefore a duality covariant formulation of supergravity is of utmost importance in order to directly investigate this fundamental theory in the low energy limit.

The embedding tensor encodes all the coupling constants and masses of the supergravity theory.

In extended supergravities (i.e. $N > 1$) it defines the local internal symmetry group, which, for a fixed amount of supersymmetry and a given mass content, is the only deformation of these theories allowed by supersymmetry. My contribution to this achievement was essential. Moreover, by working at the same time, though in different collaborations, on flux compactifications of superstring theories to four space-time dimensions [R. D'Auria, S. Ferrara, F. Gargiulo, M. Trigiante and S. Vaula, JHEP 0306, 045 (2003); C. Angelantonj, S. Ferrara and M. Trigiante, JHEP 0310 (2003) 015, etc..], I realized that it was possible to consistently identify components of the embedding tensor, that we had previously introduced, with v.e.v of superstring excitations on the background in which the superstring is realized (fluxes and constant quantities characterizing the geometry of the ten-dimensional space-time). This interpretation of the embedding tensor allowed a systematic construction of the effective supergravity models describing various superstring compactifications and, being the embedding tensor duality-covariant, it also allowed to unveil the complex duality web connecting such solutions.

These are widely acknowledged results which several important later achievements in the study of string/M-theory vacua and solutions are based on. Examples of such results include the effective four-dimensional description of massive Type IIA theory compactified on a sphere [A. Guarino, D.L. Jafferis, O. Varela, Phys. Rev. Lett. 115 (2015) no.9, 091601] and the discovery of a class of $SO(8)$ gaugings of maximal supergravity generalizing the original model by de Wit and Nicolai, see point C). The relevance of the embedding tensor formulation, and my essential contribution to its introduction and development, are proven by the fact that I was invited two years ago to write a paper for Physics Reports on the issue gauged supergravities. This paper is the result of an intense two-year work in which the embedding tensor formulation of gauged supergravities is reviewed and applied to the most general theory. I also give a comprehensive discussion of the various applications of this formalism, including the most recent ones, to the study of superstring/M-theory compactifications. It was published in 2017 [M. Trigiante, "Gauged Supergravities," Phys. Rept. 680 (2017) 1] and has already 21 citations (source INSPIRE, High-Energy Physics Literature Database).

Using the embedding tensor formalism I was able, in collaboration with Prof. S. Ferrara and Prof. R. D'Auria to construct the four-dimensional effective description of Type II superstring theory compactified on a generic manifold with $SU(3) \times SU(3)$ structure [R. D'Auria, S. Ferrara and M. Trigiante, Nucl. Phys. B 780 (2007) 28] (see discussion on paper 7 in point 1.2 below). I was invited to give a seminar about this result at the prestigious international conference STRINGS 2007, 25-29/6/2007 Madrid (Spain).

The embedding tensor technique also allows to look for vacua of a given theory with certain properties (residual supersymmetry, cosmological constant etc.) by simultaneously scanning through all possible gaugings of the model. In this way several new vacua have been found. Of special relevance are the anti de Sitter solutions in light of the so-called AdS/CFT (holographic) correspondence which relates supergravity on this kind of spacetimes to the strong coupling regime of a conformal field theory (CFT) on the boundary (in one dimension less). This has allowed to infer, from a gravitational model, important information about the strongly coupled regime of non-gravitational models describing for instance condensed matter systems. Moreover it was possible to describe, through supergravity solutions, renormalization group flows connecting different CFTs at UV and IR fixed points.

My unique expertise in the construction of supergravity models played an essential role in the construction of the first instances of extended supergravity models ($N = 2$) exhibiting a stable de Sitter [P. Fre, M. Trigiante and A. Van Proeyen, Class. Quant. Grav. 19 (2002) 4167, paper n. 71 in the list

attached at the end of this curriculum vitae]. This result has attracted considerable interest in the scientific community, see for instance the reference [R. Kallosh, A. D. Linde, S. Prokushkin and M. Shmakova, Phys. Rev. D 66 (2002) 123503].

B) STUDY OF BLACK HOLE SOLUTIONS IN SUPERGRAVITY AND THEIR FIRST ORDER DESCRIPTION

Black holes are solitonic solutions in supergravity theories featuring, in general, electric and magnetic charges. Black hole solutions (to ungauged theories) naturally belong to orbits with respect to the global symmetry group G of the supergravity theory (duality group). Supersymmetric solutions (BPS black holes) have played an important role in the study of superstring/M-theory dualities. They have provided an invaluable test-ground for these candidate-“microscopic” theories where it was possible to reproduce the Bekenstein-Hawking formula from a microscopic entropy counting. An interesting property of supergravity black holes derives from the property that, even in the absence of minimal couplings, supersymmetry requires the scalar fields to be non-minimally coupled to the vector fields (i.e. they enter the kinetic terms of the vector fields). As a consequence of this the scalar fields feature a characteristic evolution from radial infinity to the horizon which, for static, spherically symmetric solutions, is described by an effective autonomous Hamiltonian system in which the radial variable plays the role of time. In the extremal solutions (which include the BPS ones) the radial evolution of the scalar fields is governed by a system of first order “gradient-flow” differential equations characterized by a superpotential W which depends on the duality orbit of solutions. Such dynamical system has a critical point at the horizon where the scalar fields and the geometry are fixed in terms of the quantized electric and magnetic charges (attractor mechanism).

This function is expected to play a relevant role in the microscopic description of the extremal black hole. In particular, as we have shown, it has the properties of a c -function associated with the radial flow of the scalar fields on the solution, whose value monotonically interpolates between the value of the black hole entropy at the horizon (given by the Bekenstein-Hawking formula in terms of the horizon area) and the ADM-mass of the solution at radial infinity. I have been actively involved, in various collaborations, in the study of supergravity black holes and their duality properties and, in particular, in finding an intrinsic characterization of the function W . This was given in a generic extended supergravity in terms of duality invariant quantities in

L. Andrianopoli, R. D'Auria, E. Orazi and M. Trigiante, “First order description of black holes in moduli space,” JHEP 0711 (2007) 032 [doi:10.1088/1126-6708/2007/11/032]

and in [L. Andrianopoli, R. D'Auria, E. Orazi and M. Trigiante, “First Order Description of $D=4$ static Black Holes and the Hamilton-Jacobi equation,” Nucl. Phys. B833 (2010) 1]. My contribution to these works was essential: I had the idea of applying the Hamilton-Jacobi theory to the study of the radial flow of the scalar fields and, in particular, of identifying W for four-dimensional black holes with the Hamilton’s characteristic function of the associated Hamiltonian system. From this the duality invariance of W can be easily proven on general grounds and an integral form for it can be derived for the most general duality orbit of solutions. This idea was further developed in [L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, “Fake Superpotential for Large and Small Extremal Black Holes,” JHEP 1008 (2010) 126, paper n. 32 in the list at the end of this curriculum vitae] where I identified W with the Liapunov function of the dynamical system whose existence implies that the horizon is an asymptotically stable attractor point. Our approach to the study of spherically symmetric black holes, which is based on the Hamilton-Jacobi theory, has been extensively used in the subsequent literature and, more recently, in the study of asymptotically anti-de Sitter supergravity black holes which are particularly relevant to the AdS/CFT correspondence [see for instance D. Klemm, N. Petri and M. Rabbiosi, JHEP 1604 (2016) 008]. In particular, using the first integrals of motion associated with the symmetries of the Hamiltonian system, new solutions have been found. One of these constants of motion is model-independent and was defined in [M. Trigiante, T. Van Riet and B. Vercnocke, JHEP 1205 (2012) 078, paper n. 26 in the list at the end of this curriculum vitae].

C) CONSTRUCTION OF NEW FAMILY OF SUPERGRAVITY MODELS WITH MAXIMAL SUPERSYMMETRY AND MAXIMALLY SUPERSYMMETRIC VACUUM

By applying the embedding tensor description of maximal four-dimensional gauged supergravity, a new class of models with local $SO(8)$ symmetry were constructed. This led to a publication on Physical Review Letters

G. Dall'Agata, G. Inverso and M. Trigiante, "Evidence for a family of $SO(8)$ gauged supergravity theories," Phys. Rev. Lett. 109 (2012) 201301.

This new class of maximal models was found (dyonic $SO(8)$ -gaugings) by gauging the $SO(8)$ symmetry group in a family of different symplectic frames, which are not related by the action of the duality group G . This result has had and is having an considerable resonance in the scientific community (95 citations according to INSPIRE, High-Energy Physics Literature Database) since it contradicted the common lore that the $SO(8)$ -gauged maximal four-dimensional supergravity, originally constructed by de Wit and Nicolai in the eighties, was unique. These new models exhibit a variety of new vacua and their physical properties are still under study. My contribution to this work was crucial since, by applying group theoretical methods, developed by myself in a different collaboration in order to classify the G_3 -orbits of black holes, I could show that in these theories the embedding tensor belongs to different G -orbits than in the original $SO(8)$ -gauged theory.

The rich vacuum structure of these models makes them particularly interesting in the context of AdS/CFT. In spite of this, the higher dimensional ultra-violet completion of these new models, within superstring theories or eleven dimensional supergravity, is as yet elusive. Interestingly, this may hint towards new non-perturbative aspects of superstring theories uncovered by these four-dimensional theories.

I am currently actively working on finding a higher-dimensional interpretation of these maximal supergravities with dyonic- $SO(8)$ gauging.

As opposed to their semisimple counterparts, dyonic generalizations of known non-semisimple gaugings of maximal supergravity, featuring new interesting physics, have been uplifted to (massive) Type IIA or Type IIB theories, together with their vacua. I was also actively involved in the attainment of these results [A. Gallerati, H. Samtleben and M. Trigiante, JHEP 1412 (2014) 174, G. Inverso, H. Samtleben and M. Trigiante, Phys. Rev. D 95 (2017) no.6, corresponding to papers N. 12 and 2 in the list at the end of the curriculum vitae].

In all these works my contribution was determinant and clearly recognizable since it was based on a unique expertise that I had developed during my personal research career. Their relevance is proven by the several invited seminars (including plenary talks) given at international conferences. My research has been attracting PhD students from Italy and abroad. Since 2011 I have supervised six PhD students both of the University of Turin and of Politecnico, one of them (A. Gallerati) won a Quality Award for his thesis. My qualification as a distinguished international expert in my field is proven by the recent invited, single author contribution to Physics Reports [M. Trigiante, "Gauged Supergravities," Phys. Rept. 680 (2017) 1], see paper 1) of the list in point 1.2, and by the several invitations to give lectures on my subject at international schools [e.g. "Mesoamerican School on Theoretical Approaches to Black Hole Physics: String and related approaches", september 11 to 16, 2017, Tuxtla Gutiérrez, Chiapas, México, at the Pontificia Universidad Católica de Valparaíso (Chile) on 18,19,20/6/2014; at the International Institute of Physics (IIP-UFRN), 8-19 of June 2015, Natal, Rio Grande do Norte, Brazil; LACES 2015, Arcetri-Italy, Nov. 23 – Dec. 11, 2015], see list in section 3 below.

I have collaborations with ENS-Lyon, CERN, KU Leuven, CECs-Valdivia and University of Viña del Mar (Chile).

2. Coordination of research and technology transfer groups and projects.

- **Coordination and management of research groups, possibly with international relationships and collaborations**

- Since the retirement of Prof. Riccardo D'Auria in 2010, **I am the coordinator of the research group on the Theory of Fundamental Interactions** at Politecnico di Torino http://www.disat.polito.it/research/research_groups/fundint/theory_of_fundamental_interactions;
- Since 2010 our group has established a solid scientific collaboration with a number of universities in Chile (Pontificia Universidad Catolica de Valparaiso, University Adolfo Ibañez in Viña del Mar, Universidad de Concepción), which was recently extended to CECs center in Valdivia. This collaboration led to a co-tutelle agreement between Politecnico di Torino and some of these Universities for an exchange of PhD students.

Within this co-tutelle program **I supervised three foreign PhD students:**

- Nelson Ruben Merino Moncada who attained the PhD degree in March 2012;
- Patrick Keissy Concha Aguilera who attained the PhD degree in Sept. 2015;
- Marcelo Javier Calderon Ipinza who attained the PhD degree in April 2017.

These PhD degrees were attained in both Politecnico di Torino and Universidad de Concepción (Chile). From Oct. 2017 to Jan. 2018 the PhD student Gustavo Ignacio Rubio González of Universidad de Concepción (Chile) spent a period of Internship ("Dottorato di Tirocinio") in my Department under my scientific supervision. His stay was funded by the Chilean foundation CONICYT.

- I have supervised (and co-supervised) the scientific work of three postdocs (L. Sommovigo, E. Orazi and A. Gallerati, whom I am currently supervising), of seven PhD students (which include the three students in co-tutelle mentioned above, one who is my current PhD student, two PhD students co-supervised with University of Turin and A. Gallerati of whom I was the supervisor at Politecnico di Torino) and one undergraduate student for his Bachelor thesis;
- I was the **Principal Investigator ("referente scientifico")** of the project "Linear and non-linear stability in AdS", Protocol n. 7246/6.1.3, in collaboration with Dott. Andrés Fernando Anabalón Dupuy from University Adolfo Ibañez in Viña del Mar (Chile). The purpose of the project was to study the stability properties of asymptotically anti-de Sitter solutions to supergravity theories. It was completely funded by the Chilean foundation CONICYT (Comisión Nacional de Investigación Científica y Tecnológica) and was carried out in the DISAT Department of Politecnico di Torino during the period from 1/7/2016 to 31/10/2017;
- I am **member of the International Advisory Panel of the ARNOLD-REGGE CENTER** for ALGEBRA, GEOMETRY and THEORETICAL PHYSICS (<http://www.arnoldreggecenter.com/people/structure/>);
- **Principal Investigator** of the project "A geometric approach to quantum gravity" N. 4(15) for which a Senior Grant was funded by CENTRO FERMI (Museo Storico della Fisica e Centro Studi e Ricerche Enrico Fermi), for the period 1/5/2015-1/5/2018, at the DISAT Department of Politecnico di Torino. The aim of the project is to characterize the properties of supergravity vacua through a geometric analysis of the embedding tensor and its duality orbits. After a public selection the grant was used to employ Dr. Bianca Letizia Cerchiai to work on the project.
- **Principal Investigator** of the project "Modelli Cosmologici e Teorie di Gravità", bando 048/2017 for the period from 16/04/2017 to 15/04/2018 at the DISAT Department of Politecnico di Torino. The aim of the project is to study conditions on the embedding tensor under which the corresponding extended supergravity can yield viable cosmological models as consistent truncations. After a public selection Dr. A. Gallerati was designated to work on the project;
- **Principal Investigator** of the project "Modelli Fondamentali per la Cosmologia e la Microgravità" funded by FONDAZIONE CRT, bando 062/2016 for the period from 16/04/2016 to 15/04/2017 at the DISAT Department of Politecnico di Torino. The main purpose of the project

was to study conditions on the embedding tensor under which the corresponding extended supergravity can yield viable cosmological models as consistent truncations. After a public selection the funds were used to employ Dr. A. Gallerati to work on the project;

- **I won the E.U. "M. Curie" grant ERG**, contract N. MERG-CT-2005-513622, for the period from Nov. 2005 to Nov. 2006, for a project entitled "Superstring vacua from supergravity". The aim of the project was to study vacua of superstring theory through its low-energy (gauged) supergravity description. This grant has been used to employ a post-doc (Dr. Luca Sommovigo) at the Physics Department of Politecnico of Turin to collaborate with myself and Prof. R. D'Auria on the project;
- **I won the E.U. fellowship "M. Curie"** for the period from Nov. 2001 to Nov. 2003, contract N. HPMF-CT-2001-01276, which was spent at the Spinoza Institute (Utrecht) on a project entitled "D-Branes in curved spaces: fractional branes and four dimensional black holes".

• **Affiliation to Scientific Societies/Associations/Institutes/Projects and Awards**

- I am **member of the International Advisory Panel of the ARNOLD-REGGE CENTER** for ALGEBRA, GEOMETRY and THEORETICAL PHYSICS as mentioned above (<http://www.arnoldreggecenter.com/people/structure/>);
- Since 2011 I have an affiliation with the National Institute for Nuclear Physics (INFN) with the role of "Incarico di Ricerca";
- 2004-2011: I participated in the Italian Networks PRIN 2005, PRIN 2007, PRIN 2009:
 - PRIN 2005, Protocol 2005024045_005 (24 months)
 - PRIN 2007, Protocol 20075ATT78_005 (24 months)
 - PRIN 2009, Protocol 2009KHZKRX_006 (24 months)
- 2000-2003: Affiliation with European Networks RTN, contract N.s HPRN-CT-2000-00131 (in association with University of Utrecht, The Netherlands), MRTN-CT-2004-005104 (in association with Università degli Studi di Torino, Turin, Italy);
- 2005-2006: E.U. "M. Curie" grant ERG, contract N. MERG-CT-2005-513622 (mentioned above);
- 2001-2003: E.U.-Marie Curie Fellow, under Marie Curie contract N. HPMF-CT-2001-01276 (mentioned above);
- 1997-2000: Affiliation with European Network TMR, contract N. ERBFMRX-CT96-0012 in association with the University of Wales Swansea, U.K.;
- 1996-1997: Affiliation with European Network TMR, contract N. ERBFMRX-CT96-0045.

• **Activity as supervisor of bachelor, PhD students and postdocs**

- I was the academic supervisor of postdoc Dr. Luca Sommovigo from 2005 to 2006. He was employed with a "M. Curie" grant ERG that I had won, see above;
- I am the academic supervisor of postdoc A. Gallerati on the project "Modelli Cosmologici e Teorie di Gravità" (bando n. 048/2017, for the period from 16/04/2017 to 15/04/2018 at the DISAT Department of Politecnico di Torino), see above, of which I am the principal investigator;
- I was the academic supervisor of postdoc A. Gallerati on the project "Modelli Fondamentali per la Cosmologia e la Microgravità" funded by FONDAZIONE CRT (bando n. 062/2016, for the period from 16/04/2016 to 15/04/2017 at the DISAT Department of Politecnico di Torino), see above, of which I was the principal investigator;

- I am supervising Dr. B.L. Cerchiai on the project "A geometric approach to quantum gravity" funded by Centro Fermi (bando n. 4(15) , for the period 1/5/2015-1/5/2018, at the DISAT Department of Politecnico di Torino), see above, of which I am the principal investigator;
- I am currently supervising the PhD student Dr. Ruggero Noris at Politecnico di Torino on a thesis on the application of AdS/CFT to the study of graphene;
- 2014-2017: I co-supervised Daniele Ruggeri on his PhD thesis work as a student at Università degli Studi di Torino;
- 2015-2017: I was the PhD supervisor at Politecnico di Torino of Marcelo Javier Calderon Ipinza
- 2013-2015: I was the PhD supervisor at Politecnico di Torino of Patrick Keissy Concha Aguilera;
- 2011-2014: I was the PhD supervisor of Antonio Gallerati. **He won a *Quality Award* for his thesis** on "*Supergravity Solutions*";
- 2008-2011: I co-supervised Riccardo Nicoletti on his PhD thesis work as a student at Università degli Studi di Torino;
- 2010-2012: I was the PhD supervisor at Politecnico di Torino of Nelson Ruben Merino Moncada;
- 2007-2010: I supervised the research work of Emanuele Orazi, PhD student during the first year and postdoc during the last two;
- I supervised the PhD work of Paolo Giaccone at Politecnico di Torino;
- 2010: I supervised the undergraduate student Marco Agnese on his [Bachelor thesis](#). Marco Agnese is currently a PhD student at Imperial College London, UK:

3. National and international reputation and professional activity for the scientific community

- **Official research and/or teaching and/or fellowship role assignment, positions as visiting scholar/visiting professor in international highly qualified universities and research centers, awards**
 - 7/11/2005-14/11/2005: I was invited as Visiting Scientist at the University of California Los Angeles, CA, USA;
 - Since the late nineties I was often invited, almost on a yearly basis, as Visiting Scientist at CERN (Geneva, Switzerland) for scientific collaboration;
 - 15/06/2014 - 04/07/2014: I was invited as "Visiting Professor" by Pontificia Universidad Catolica de Valparaiso (PUCV), Chile, to give a 6h PhD course entitled "Black Holes in Supergravity" and for collaboration purposes. I prepared for the occasion lecture notes (123p. in LaTeX) on Supergravity theories and their black hole solutions which were very much appreciated;
 - In January 2014 **I was awarded the Italian National Scientific Qualification for Full Professor Position** ("Abilitazione Scientifica Nazionale di I Fascia") in the Academic Recruitment Field 02/A2 **with a very high rating of both his titles and publications** by the five referees: for the publications I was given three "A" (excellent) and two "B" (very good), while for the titles four "A" and one "B";
 - 2005-2006: I won the E.U. "M. Curie" grant ERG, contract n. MERG-CT-2005-513622 (mentioned above);

- 2003-2007: I was employed at Politecnico di Torino as "Professore a contratto" (Temporary Professorship) within the program named "Rientro dei Cervelli" of the Ministry of Education, University and Research (as mentioned above);
- 2001-2003: E.U.-Marie Curie Fellow, under the Marie Curie contract n. HPMF-CT-2001-01276, at the Spinoza Institute (University of Utrecht) (as mentioned above);
- 2000-2001: postdoc position , at the Spinoza Institute (University of Utrecht) (as mentioned above);
- 1997-2000: postdoc position at the University Of Wales Swansea (as mentioned above).

- **Participation in national/international conferences/schools, as a distinguished invited speaker/lecturer**

I was invited to report on my work in various national and international conferences and schools such as Ninth Marcel Grossmann Meeting, Rome, July 2 - 8, 2000, University of Rome "La Sapienza"; the Workshop on "Generalized Geometry and Flux Compactifications", 19/2/2007-1/3/2007, DESY (Hamburg, Germany); STRINGS 2007, 25-29/6/2007 Madrid (Spain), etc., see list below.

1. **Invited lecturer** on "Gauged Supergravities" at the School on Supergravity and Black Holes at University Adolfo Ibanez, Viña del Mar, 18-30 November 2018;
2. He has been invited to give a **plenary talk** at the Workshop "Geometry, Duality and Strings", 23-26 May 20018, Murcia Spain;
3. **Invited speaker** at the conference "Holography and Supergravity 2018", Jan 8-12 2018, University Adolfo Ibañez, Viña del Mar, Chile. I gave a talk entitled "Instantons on $AdS_5 \times S^5 / Z_k$ ";
4. Sept. 2017: On invitation, **I gave remote lectures** on "Supergravity Black Holes" at the "Mesoamerican School on Theoretical Approaches to Black Hole Physics: String and related approaches", september 11 to 16, 2017, Tuxtla Gutiérrez, Chiapas, México (sponsors: ICTP, MMCTP, CONACyT and UNACH). I was in the Organizing Committee of this school (see below);
5. June 29 2017; **Invited speaker** at the meeting "Pietro Frè: a bridge between Italian and Russian science" in honor pf Prof. P. Frè, at Moscow State University Moscow, Russia. I gave a seminar, in remote, entitled "The Inspiring Beauty of Symmetry: To My Great Friend and Collaborator Pietro";
6. **Invited speaker** at the workshop "Supergravity What Next", at the Galileo Galilei Institute (GGI) Arcetri 05-09-2016 to 28-10-2016. Title of the talk "Dualities in non-linear theories" ;
7. I has been invited to give a **Plenary Talk** at the conference "Theoretical Frontiers in Black Holes and Cosmology", to be held at the International Institute of Physics (IIP-UFRN), 8-19 of June 2015, Natal, Rio Grande do Norte, Brazil;
8. **Invited lecturer** at the school "Theoretical Frontiers in Black Holes and Cosmology", held at the International Institute of Physics (IIP-UFRN), 8-19 of June 2015, Natal, Rio Grande do Norte, Brazil. I gave lectures on "Gauged Supergravities";
9. **Invited speaker** at the "VII Round Table Italy-Russia@Dubna", November 24 - November 28, 2015, Dubna, Moscow Region, Russia; The title of the talk was "New Physics from maximal Supergravity".
10. I have been invited as a "**Special Invited Guest**" to give a seminar at the conference EU - Russia year of Science "A Window on Physics, Biology and Technology", at the Abdus Salam International Center for Theoretical Physics, 4 - 6 November 2014, Trieste; The title of the talk was "New Physics from maximal Supergravity";
11. I was invited to give a **Plenary Talk** at the XXI st International Conference on Integrable Systems and Quantum symmetries (ISQS-21) Prague, Czech Republic, from June 11 till June 16, 2013; The title of the talk was "On D=4 Stationary Black Holes"

12. I was invited by Prof. Olivera Miskovic of the Pontificia Universidad Catolica de Valparaiso (Chile) to give a **Plenary Talk** at the International Meeting "Meeting on the horizon", March 10-14 2014, Valparaiso, Chile. I had to turn down the invitation due to his teaching duties at Politecnico di Torino in that period;
13. **Invited lecturer** at the school LACES 2015, held at the Galileo Galilei Institute for Theoretical Physics, Arcetri-Italy, November 23 - December 11, 2015. I gave a 12 hour PhD course on "Introduction to Supergravity".
14. **Invited speaker** at the conference "Supergravity 2015" - Padova, October 29-30; the title of the talk was "On partial rigid supersymmetry breaking from spontaneously broken supergravity";
15. **Invited lecturer** at the Pontificia Universidad Catolica de Valparaiso (Chile) on 18,19,20/6/2014. I gave 6 hour PhD lectures on "Black Holes in Extended Supergravity" ;
16. **Invited speaker** at the conference "SYMMETRIES OF THE UNIVERSE AND OF THE FUNDAMENTAL INTERACTIONS", Scuola Normale Superiore, Pisa, 16-17 May 2013 ; The title of the talk was "Issues on D=4 Rotating Black Holes";
17. **Invited speaker** at the Round Table FRONTIERS OF MATHEMATICAL PHYSICS , Dubna (Russia) from December 15th to December 19th 2012. The title of the talk was "Gauged Supergravities in Different Frames";
18. **Invited speaker** at Latino-American Workshop on High Energy Physics: Particles and Strings, Havana, Cuba, 15-21 July 2012. The seminar title was: "D = 4 Black Holes From Real Nilpotent Orbits";
19. **Invited speaker** at the international Workshop "Supersymmetries and Quantum Symmetries" (SQS'2011), Bogoliubov Laboratory of Theoretical Physics (JINR, Dubna) 18-23 July 2011. I gave a seminar entitled "D=4 Black Holes from Geodesics";
20. **Invited participant and speaker** in the ESI Program on "Higher Structures in Mathematics and Physics", Vienna, September 1 - November 7, 2010; Title of the talk: "New superstring compactifications from supergravity";
21. **Invited lecturer** on "black holes in supergravity" at the School on Attractor Mechanism (SAM 2009), 29 June - 3 July 2009, Frascati Italy;
22. **Invited speaker** at the PRIN meeting "Symmetries of the Universe and of the Fundamental Interactions ", Scuola Normale Superiore, Pisa, 14-15 Dec. 2007. Title of the talk: "New superstring compactifications from supergravity";
23. **Invited speaker** at STRINGS 2007, 25-29/6/2007 Madrid (Spain). The title of the seminar was "N=2 supergravities from generalized Calabi-Yau compactifications";
24. **Invited speaker** at the International Workshop "Lie Theory and Its Applications in Physics", 18-24 June 2007, Varna, Bulgaria. There I gave a seminar entitled "N = 2 supergravities from generalized Calabi-Yau compactifications."
25. **Invited speaker** to the Workshop on "Generalized Geometry and Flux Compactifications", 19/2/2007-1/3/2007, DESY (Hamburg, Germany), where I gave a seminar entitled Mirror symmetric gauged N = 2 supergravities;
26. **Invited as moderator** in the Workgroup on "Gauged Supergravity" at the RTN winter school on "Strings, Supergravity and Gauge Theories", 15/1/2007-19/1/2007, CERN (Geneva, Switzerland), where I gave an overview of the recent advances in the field;
27. **Invited speaker** at the workshop of the RTN network "The quantum structure of spacetime and the geometric nature of fundamental interactions ", Kolybari, Crete, 5-10 Sept., 2004. Title of the talk: "IIB on K3xT2/Z2 orientifold + flux and D3/D7: a supergravity view-point";
28. **Invited speaker** at the RTN Workshop in Leuven, Sept. 13-19, 2002. Title of the talk: "Stable de Sitter solutions in extended supergravities";
29. **Invited speaker** at the RTN Workshop "The Quantum Structure of Spacetime and the Geometric Nature of Fundamental Interactions", Corfu 13-20 September 2001. Title of the talk: "Supersymmetric 3-brane solution on smooth ALE manifolds with flux";
30. **Invited speaker** at the Workshop on the Quantum Structure of Spacetime and the Geometric Nature of Fundamental Interactions (1st Workshop of RTN Network and 34th International

Symposium Ahrenshoop on the Theory of Elementary Particle), Berlin, Germany, 4-10 Oct 2000. Title of the talk: "Microscopic Entropy of the Most General Four Dimensional BPS Black Hole for Type II/M -Theory on Torii";

31. **Invited speaker** at the Fourth Annual European TMR Conference on Integrability, Non-perturbative effects and Symmetry in Quantum Field Theory, Paris, 7-13 September 2000. Title of the talk: "Four-dimensional BPS black holes: Macroscopic and microscopic correspondence";
32. **Invited speaker** at the Ninth Marcel Grossmann Meeting on "recent developments in theoretical and experimental general relativity, gravitation and relativistic field theories", Rome, July 2 - 8, 2000, University of Rome "La Sapienza". Title of the talk: "Regular BPS Black Holes: Pinpointing the Macro-Micro Correspondence";
33. **Invited speaker** at the TMR meeting 20-25 September 1999, SISSA-ISAS, Trieste, Italy. Title of the talk: "Counterterms in Less Than Maximal Supergravities";
34. **Invited speaker** at the TMR Mid-Term Review on "Integrability, Non-Perturbative Effects and Quantum Field Theory", 10-12 December 1998, Mons, Belgium. Title of the talk: "BPS Black Holes in $N = 8$, $D = 4$ Supergravity";
35. **Invited speaker** at the SIGRAV (Italian Society of general Relativity) meeting, 20-27 September, Bari (Italy). Title of the seminar "AdS/CFT and Singletons";
36. **Invited speaker** at the "Second Annual European TMR Conference on Integrability, Non-perturbative Effects and Symmetry in Quantum Field Theory", 20 - 27 September 1998, Durham, United Kingdom. Title of the talk "Anti-de Sitter Geometry and Brane Physics";
37. **Invited speaker** at "Cortona 97 : informal meeting on particle physics "; 4-7 June 1997 Villa Olmo, Como (Italy). Title of the talk "U-duality and Solvable Lie Algebras";
38. **Invited speaker** at the work-shop on "Gauge Theories, Applied Supersymmetry and Quantum Gravity" at Imperial College (London, 5-10 July 1996). Title of the talk: "Spontaneous supersymmetry breaking from $N = 2$ to $N = 1$ ".

Aside from the above invited participations in national and international conferences I have been invited to give seminars in various national and **international highly qualified universities and research centers**, such as University of California Los Angeles (CA, USA), Spinoza Institute (University of Utrecht, The Netherlands), NIKHEF (Amsterdam) etc.

39. **Invited speaker** at the Andrés Bello National University of Santiago (Chile) on 25/6/2014. The title of the talk was "Gauged Supergravities in Different Frames";
40. **Invited speaker** at University of Amsterdam on 7/2/2014. The title of the talk was "Dual Rotating Black Holes";
41. **Invited speaker** at University of Milano Bicocca on 31/10/2013. The title of the talk was "Dual Rotating Black Holes";
42. **Invited speaker** at L'Université Libre de Bruxelles, Belgium, on the 20/2/2013; The title of the talk was "Gauged Supergravities in Different Frames";
43. **Invited speaker** at the Spinoza Institute in Utrecht on 1/2/2013; The title of the talk was "Gauged Supergravities in Different Frames";
44. **Invited speaker** at Università di Roma Torvergata, on 16/11/2012. The title of the talk was "Gauged Supergravities in Different Frames";
45. **Invited speaker** at the Spinoza Institute in Utrecht on 12/11/2010. Title: "Black Holes and Integrability";
46. **Invited speaker** at the Department of Mathematics of Politecnico of Turin on 16/2/2010. Title of the talk "Black Holes and the Hamilton-Jacobi Equation";
47. **Invited speaker** at SISSA-ISAS, Trieste (Italy) on the 18/6/2008. Title of the talk "New superstring compactifications from supergravity";
48. **Invited speaker** at University of Groningen (The Netherlands) on the 20/2/2008. Title of the talk "New superstring compactifications from supergravity";

49. **Invited speaker** at University of Valencia (Spain) on the 11/12/2007. Title of the talk "New superstring compactifications from supergravity";
50. **Invited speaker** at 17th SIGRAV Conference, 4-7 Sep 2006. Turin, Italy. Title of the talk: "Dual Gauged Supergravities";
51. **Invited speaker** at L'Université Libre de Bruxelles, Belgium on the 22/2/2006. Title of the talk "Duality covariant formulation of gauged supergravity";
52. **Invited speaker** at Spinoza Institute in Utrecht, The Netherlands on the 2/11/2005. Title of the talk "M-theory compactifications from dual perspectives";
53. **Invited speaker** at University of California Los Angeles, CA, USA in 11/2005. Title of the talk "M-theory compactifications and gauged supergravity,";
54. **Invited speaker** at Ludwig-Maximilians-Universität, Muenchen, Germany in 4/11/2004. Title of the talk "Compactification with Fluxes: a Supergravity Viewpoint";
55. **Invited speaker** at University of Torvergata (Rome) in 8/2/2004. Title of the talk "Compactification with fluxes, a supergravity point of view";
56. **Invited speaker** at SISSA-ISAS, Trieste (Italy) on Apr. 30, 2003. Title of the talk: "N = 4 Supergravity Action for Type IIB Superstring on T6/Z2 orientifold with fluxes and D3-branes";
57. **Invited speaker** at NIKHEF center Amsterdam, The Netherlands on 27 April 2001. Title of the talk: "A macroscopic and microscopic analysis on the most general supersymmetric black hole in four dimensions";

- **Role and membership in Scientific Committees**

- In Jan. 2019 he was part of the evaluation committee for the call to associate professor at SISSA-ISAS (Trieste) of Dr. Francesco Benini;
- In 2018 he was member of the selection committee for the assignment of PhD fellowships for the Doctorate Course in Physics at Politecnico di Torino;
- Jan 26 2018: I was part of the PhD defense committee for the PhD thesis of the students N. Petri and M. Rabbiosi at Università degli Studi di Milano;
- May. 2016: I was invited by Prof. T. Hertog to be a member of the doctoral jury for assessing the thesis of his PhD student Ellen van der Woerd and to participate in her defence which took place on Sept. 2016;
- May. 2013: Invited by Instituto de Fisica Teorica UAM/CSIC-Madrid, as an International Expert, to report on the PhD thesis of Dr. Carlos Shahbazi Alonso;
- Feb. 2012: Member of the PhD defense committee for the PhD thesis of Dr. Daniel Farquet at the Swiss Federal Institute of Technology Lausanne (Lausanne, Switzerland);
- Sept. 2010: Member of the PhD defense committee for the PhD thesis of Dr. Teake Nutma at the University of Groningen (The Netherlands);
- June 2010: Member of the PhD defense committee for the PhD thesis of Dr. A. Le Diffon at the ENS of Lyon (France);
- Sept. 2008; Member of the PhD defence committee for the PhD thesis of Wissam Chemissany at the University of Groningen (The Netherlands);
- Sept. 2007: Member of the PhD defence committee for the PhD thesis of Thomas Van Riet at the University of Groningen (The Netherlands);
- July 2007: Member of the PhD defence committee for the PhD thesis of Jan Rosseel at the Catholic University of Leuven (Belgium);
- August 2006: Member of the PhD defence committee for the PhD thesis of Geert Smet at the Catholic University of Leuven (Belgium).

- **Organization of national and international conferences, schools and events**

- **Member of the organizing committee** of the "Mesoamerican School on Theoretical Approaches to Black Hole Physics: String and related approaches", September 11 to 16, 2017, Tuxtla Gutiérrez, Chiapas, México (sponsors: ICTP, MMCTP, CONACyT and UNACH) [<http://mctp.mx/e-black-hole.html>];
- **On 14 April 2016, I organized in collaboration with Prof. A. Tartaglia** the public event consisting of a seminar by Prof. Gianluca Gemme (representing INFN in the VIRGO Project) entitled "La rivelazione diretta di onde gravitazionali: tecniche sperimentali e implicazioni scientifiche" and public seminars "Che cosa sono le onde gravitazionali previste dalla relatività generale e quali ne sono le sorgenti" by Prof. Targaglia and "**Relatività generale, onde gravitazionali ed oltre**" by **M. Trigiante**. The event was payed on the research funds of my group;
- **Part of the organizing committee** for the Workshop "D'Auria Fest" organized at Politecnico di Torino, in the occasion of the 70th birthday of Prof. Riccardo D'Auria, 22-23 April 2010, Turin;
- **In Jan. 2009 I organized, together with L. Andrianopoli and R. D'Auria, the public event "LHC Colloquium" at Politecnico di Torino** consisting in a main lecture by Prof. Gigi Rolandi (Physics Coordinator of the CMS experiment at CERN, Geneva) on the LHC (Large Hadron Collider) experiment at CERN, followed by public talks by Prof. M. Gallio and Prof. A. Staiano on different experiments in LHC;
- **I was a convenor** of the parallel session on "Non-Perturbative Field Theory, String Theory, Quantum Groups and Non-Commutative Geometry" of the 2007 Europhysics Conference on High Energy Physics, 19-25 July 2007, Manchester (England);
- **Part of the organizing committee** for the third RTN Winter School "The Quantum Structure of Spacetime and the Geometric Nature of Fundamental Interactions", 17-22 January 2002, Utrecht, The Netherlands;

- **Referee of international projects and journals**

- I was invited in various occasions by the Chilean National Science and Technology Commission (CONICYT - Chile) to review research proposals submitted to the FONDECYT grant as an international expert in the field;
- I was invited by the Research Foundation - Flanders, as an international expert in the field, to review project proposals for a Pegasus Grant;
- I was selected as a referee and refereed projects for the national Italian project "Rita Levi Montalcini" as an international expert in the field;
- I am Review Editor for Frontiers;
- I am reviewer for Phys. Rev. Lett., Physical Review D, JHEP, Nuclear Physics B, Classical and Quantum Gravity, Foundations of Physics, Euro Physics Letters, Journal of Physics A, Mathematical Reviews;
- I was acknowledged by Elsevier as *Most Valued Reviewer* of 2014;

4. Teaching activity

- **Formal responsibility of Bachelor's (Laurea) and Master of Science's (Laurea Magistrale) degree courses in Italian and/or foreign universities.**

- **Academic-year 2017-2018:** Lecturer ("Docente titolare") of a 2nd year course on Classical Electromagnetism (code 20AXPMB); Lecturer ("Docente titolare") of a 1st year course on Classical Mechanics and Thermodynamics ("Fisica I", code 17AXOLZ).
- **Academic-years 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017,** Lecturer ("Docente titolare") 100 hour, 1st year course on Classical Mechanics and Thermodynamics ("Fisica I", code 17AXOLZ). I also taught the exercise sessions. *I prepared lecture notes (more than 200 pages, LaTeX with figures) which are very much appreciated by the students.*

My lectures given during the academic year 2011-2012 were filmed and used by Politecnico di Torino for its students attending the courses in structures owned by Politecnico (Strutture Decentrate di Supporto agli Studenti – SDSS) and located in different towns (Biella, Verrès, Scano di Montiferru, etc.). During all the academic years starting from 2010, I also taught to the SDSS students and examined them. My videocourse was also made available to all the first year students as a didactic support.

- **Academic-years 2008-2009, 2009-2010,** Lecturer ("Docente titolare") of a course on Classical Mechanics, Thermodynamics and Classical Electromagnetism ("Fisica", code 01AWRDI) of which I also taught the exercise sessions.
- **Academic-year 2007-2008:** Lecturer ("Docente titolare") of two courses on Classical Electromagnetism: Fisica Generale II (for the 3rd Faculty "III Facoltà", code 08AXMHK), of which I also taught the exercise and laboratory sessions, and Fisica Sperimentale II (for Automotive Engineering, code 02EMPBK) of which I also taught the exercise sessions.
- **Academic-year 2006-2007:** Lecturer ("Docente titolare") of a course on Classical Electromagnetism: Fisica Generale II (for the 3rd Faculty "III Facoltà", code 08AXMHK), of which I also taught the exercise and laboratory sessions, and two courses, in English, for foreign students. These two courses, "Experimental Physics I and II", codes 01KWWHX and 01KWXXH, respectively, were on Classical Mechanics, Thermodynamics and Classical Electromagnetism, of which I also taught the exercise sessions.
- **Academic-years 2004-2005, 2005-2006:** Lecturer ("Docente titolare") of a course on Classical Electromagnetism: Fisica Generale II (for the 3rd Faculty "III Facoltà", code 07AXMCJ), of which I also taught the exercise sessions.
- **Academic-years 2003-2004:** Lecturer ("Docente titolare") of a course on Classical Electromagnetism: Fisica Generale II (for the 3rd Faculty "III Facoltà", code 03AXM), of which I also taught the exercise sessions.

All these courses have been appreciated by the students, as it can be verified from the results of the "CPD questionnaires".

- **PhD degree courses in Politecnico di Torino**

- **Academic-years 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2017-2018:** I have been teaching a 20 hour PhD course on "The Theory of Groups and some of its Applications", code 01MLTKG.

I have prepared lecture notes (more than 150 pages, LaTeX with figures) which are very much appreciated by the students. My course have been attended by a colleague of the Mathematics Department (Prof. Letterio Gatto) who has valued it very positively and recommended students of his Department to attend it.

- **Teaching activity in other Institutions:**

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- I was invited to lecture on "Gauged Supergravities" at the School on Supergravity and Black Holes at University Adolfo Ibanez, Viña del Mar, 18-30 November 2018;
- Sept. 2017: I gave remote lectures on "Supergravity Black Holes" at the "Mesoamerican School on Theoretical Approaches to Black Hole Physics: String and related approaches", September 11 to 16, 2017, Tuxtla Gutiérrez, Chiapas, México (sponsors: ICTP, MMCTP, CONACyT and UNACH) [<http://mctp.mx/e-black-hole.html>] (as mentioned earlier);
- Invited lecturer at the school LACES 2015, held at the Galileo Galilei Institute for Theoretical Physics, Arcetri-Italy, November 23 - December 11, 2015. I gave a 12 hour PhD course on "Introduction to Supergravity" (as mentioned earlier);
- Invited lecturer at the school "Theoretical Frontiers in Black Holes and Cosmology", held at the International Institute of Physics (IIP-UFRN), 8-19 of June 2015, Natal, Rio Grande do Norte, Brazil. I gave lectures on "Gauged Supergravities" (as mentioned earlier);
- Invited lecturer at the Pontificia Universidad Catolica de Valparaiso (Chile) on 18,19,20/6/2014. I gave 6 hour PhD lectures entitled "Black Holes in Extended Supergravity" (as mentioned earlier);
- He gave a lecture on "black holes in supergravity" at the School on Attractor Mechanism (SAM 2009), 29 June - 3 July 2009, Frascati Italy (as mentioned earlier);
- In November 2006 I taught a 12-hour class on "black holes in general relativity" at the University of Turin, as part of the course on general relativity of Prof. P. Frè;
- As a postdoc at the Spinoza Institute (2000-2003) I assisted Prof. G. 't Hooft (Nobel Prize laureate) for his course "studentenseminarium" on neutrino-oscillations (2001) and for the exercise sessions of his course on String Theory (June 2003).

- **Popularizing science:**

- On 14/4/2017 I gave a talk "Relatività generale, onde gravitazionali ed oltre" for the general public at DISAT Department of Politecnico di Torino within a public event on the discovery of gravitational waves organized by myself and Prof. A. Targaglia (as mentioned above);
- Jan. 2017: I gave, on invitation, a popular science talk on "The Big Bang Theory" at the Istituto Statale "A. Monti", Asti;
- Jan. 2014: I gave, on invitation, a popular science talk on "The Big Bang Theory" at the ISTITUTO COMPRENSIVO STATALE "LEON BATTISTA ALBERTI", Torino;

5. Institutional offices and roles in Italian and foreign Universities

- Since 7/2018: Coordinator of the Board of the Doctorate School in Physics at Politecnico di Torino;

- In Jan. 2019 he was part of the evaluation committee for the call to associate professor at SISSA-ISAS (Trieste) of Dr. Francesco Benini;
- In 2018 he was member of the selection committee for the assignment of PhD fellowships for the Doctorate Course in Physics at Politecnico di Torino;
- Since 2011: Member of the Academic Board for the PhD course in Physics ("Collegio dei Docenti del Dottorato in Fisica"), Department DISAT, Politecnico di Torino;
- In 2014 I was member of "Giunta di Dottorato" for the PhD course in Physics, Department DISAT, Politecnico di Torino;
- Since 2011: Member of the Panel for the Selection of External Lecturers ("Commissione Albi"), Department DISAT, Politecnico di Torino;
- Since 2010: I am a representative for Physics in the Didactic Commission of the DISAT Department, Politecnico di Torino, Turin. More specifically I have been, and currently I am responsible for the selection of the lecturers for all the undergraduate courses of Classical Mechanics, Thermodynamics, Classical Electromagnetism and Optics;
- March 2017: I was in the PhD defense committee of Fabio Lingua at Politecnico di Torino;
- July 2017: I was in the PhD defense committee of Jacopo Bindi at Politecnico di Torino;
- As for the institutional roles in other national and foreign Universities, I was invited to be part of PhD defense commissions in various Universities, see "**Role and membership in Scientific Committees**" part of point 3.

COMPLETE LIST OF PUBLICATIONS (in completion of Point 1)

i. Publications in peer-reviewed international journals

1. B. Letizia Cerchiai, P. Fré and M. Trigiante "The role of $PSL(2,7)$ in M-theory: M2-branes, Englert equation and the septuples", to appear on Fortschritte der Physik;
2. L. Andrianopoli, B. L. Cerchiai, R. D'Auria and M. Trigiante, "Unconventional supersymmetry at the boundary of AdS4 supergravity," JHEP 1804 (2018) 007, doi:10.1007/JHEP04(2018)007
3. Andrés Anabalón, Dumitru Astefanesei, Antonio Gallerati, Mario Trigiante, "Hairy Black Holes and Duality in an Extended Supergravity Model", JHEP 1804 (2018) 058, doi:10.1007/JHEP04(2018)058;
4. D. Ruggieri, M. Trigiante and T. Van Riet, "Instantons from geodesics in AdS moduli spaces," JHEP 1803 (2018) 091, doi:10.1007/JHEP03(2018)091;
5. T. Hertog, M. Trigiante and T. Van Riet, "Axion Wormholes in AdS Compactifications," JHEP 1706 (2017) 067, doi:10.1007/JHEP06(2017)067
6. G. Inverso, H. Samtleben and M. Trigiante, "Type II supergravity origin of dyonic gaugings", Phys. Rev. D 95 (2017) no.6, 066020, doi:10.1103/PhysRevD.95.066020;
7. D. Ruggieri and M. Trigiante, "Stationary D=4 Black Holes in Supergravity: The Issue of Real Nilpotent Orbits", Fortsch. Phys. 65 (2017) no.5, 1700007, doi:10.1002/prop.201700007
8. M. Trigiante, "Gauged Supergravities", Phys. Rept. 680 (2017) 1, doi:10.1016/j.physrep.2017.03.001
9. B. L. Cerchiai and M. Trigiante, "On Multifield Born and Born-Infeld Theories and their non-Abelian Generalizations", JHEP 1610 (2016) 160, doi:10.1007/JHEP10(2016)160

10. H. Dietrich, W. A. de Graaf, D. Ruggeri and M. Trigiante, "Nilpotent orbits in real symmetric pairs and stationary black holes", *Fortsch. Phys.* 65 (2017) no.2, 1600118, doi:10.1002/prop.201600118
11. L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, "c-Map for Born-Infeld theories", *Phys. Lett. B* 758 (2016) 423, doi:10.1016/j.physletb.2016.05.038
12. P. Fré, P. A. Grassi, L. Ravera and M. Trigiante, "Minimal D=7 Supergravity and the supersymmetry of Arnold-Beltrami Flux branes", *JHEP* 1606 (2016) 018, doi:10.1007/JHEP06(2016)018
13. L. Andrianopoli, P. Concha, R. D'Auria, E. Rodriguez and M. Trigiante, "Observations on BI from N=2 Supergravity and the General Ward Identity", *JHEP* 1511 (2015) 061, doi:10.1007/JHEP11(2015)061
14. L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, "Observations on the partial breaking of N=2 rigid supersymmetry", *Phys. Lett. B* 744 (2015) 116, doi:10.1016/j.physletb.2015.03.032
15. L. Andrianopoli, R. D'Auria and M. Trigiante, "On the dualization of Born-Infeld theories", *Phys. Lett. B* 744 (2015) 225, doi:10.1016/j.physletb.2015.03.064
16. A. Gallerati, H. Samtleben and M. Trigiante, "The N>2 supersymmetric AdS vacua in maximal supergravity", *JHEP* 1412 (2014) 174, doi:10.1007/JHEP12(2014)174
17. P. Fré, A. S. Sorin and M. Trigiante, "The \mathfrak{g} -map, Tits Satake subalgebras and the search for N=2 inflaton potentials", *Fortsch. Phys.* 63 (2015) 198, doi:10.1002/prop.201500001
18. A. Ceresole, G. Dall'Agata, S. Ferrara, M. Trigiante and A. Van Proeyen, "A search for an N=2 inflaton potential", *Fortsch. Phys.* 62 (2014) 584, doi:10.1002/prop.201400019
19. L. Andrianopoli, A. Gallerati and M. Trigiante, "On Extremal Limits and Duality Orbits of Stationary Black Holes", *JHEP* 1401 (2014) 053, doi:10.1007/JHEP01(2014)053
20. P. Fré, A. S. Sorin and M. Trigiante, "Integrable Scalar Cosmologies II. Can they fit into Gauged Extended Supergravity or be encoded in N=1 superpotentials?", *Nucl. Phys. B* 881 (2014) 91, doi:10.1016/j.nuclphysb.2014.01.024
21. L. Andrianopoli, N. Merino, F. Nadal and M. Trigiante, "General properties of the expansion methods of Lie algebras", *J. Phys. A* 46 (2013) 365204, doi:10.1088/1751-8113/46/36/365204
22. S. Ferrara, A. Marrani, E. Orazi and M. Trigiante, "Dualities Near the Horizon", *JHEP* 1311 (2013) 056, doi:10.1007/JHEP11(2013)056
23. L. Andrianopoli, R. D'Auria, P. A. Grassi and M. Trigiante, "A Note on the Field-Theoretical Description of Superfluids", *Phys. Lett. B* 729 (2014) 172, doi:10.1016/j.physletb.2014.01.013
24. L. Andrianopoli, R. D'Auria, P. A. Grassi and M. Trigiante, "Entropy Current Formalism for Supersymmetric Theories", *Nucl. Phys. B* 892 (2015) 105, doi:10.1016/j.nuclphysb.2015.01.001
25. L. Andrianopoli, R. D'Auria, A. Gallerati and M. Trigiante, "Extremal Limits of Rotating Black Holes", *JHEP* 1305 (2013) 071, doi:10.1007/JHEP05(2013)071
26. L. Andrianopoli, R. D'Auria, P. Giaccone and M. Trigiante, "Rotating black holes, global symmetry and first order formalism", *JHEP* 1212 (2012) 078, doi:10.1007/JHEP12(2012)078
27. G. Dall'Agata, G. Inverso and M. Trigiante, "Evidence for a family of SO(8) gauged supergravity theories", *Phys. Rev. Lett.* 109 (2012) 201301, doi:10.1103/PhysRevLett.109.201301
28. S. Ferrara, A. Marrani, and M. Trigiante, "Super-Ehlers in Any Dimension", *JHEP* 1211 (2012) 068, doi:10.1007/JHEP11(2012)068
29. W. Chemissany, P. Giaccone, D. Ruggeri and M. Trigiante, "Black hole solutions to the F₄-model and their orbits (I)", *Nucl. Phys. B* 863 (2012) 260, doi:10.1016/j.nuclphysb.2012.05.016
30. M. Trigiante, T. Van Riet and B. Vercnocke, "Fake supersymmetry versus Hamilton-Jacobi", *JHEP* 1205 (2012) 078, doi:10.1007/JHEP05(2012)078
31. L. Andrianopoli, R. D'Auria, L. Sommovigo and M. Trigiante, "D=4, N=2 Gauged Supergravity coupled to Vector-Tensor Multiplets", *Nucl. Phys. B* 851 (2011) 1, doi:10.1016/j.nuclphysb.2011.05.007
32. A. Le Diffon, H. Samtleben and M. Trigiante, "N=8 Supergravity with Local Scaling Symmetry", *JHEP* 1104 (2011) 079, doi:10.1007/JHEP04(2011)079

33. P. Fre, A. S. Sorin and M. Trigiante, "Integrability of Supergravity Black Holes and New Tensor Classifiers of Regular and Nilpotent Orbits", JHEP 1204 (2012) 015, doi:10.1007/JHEP04(2012)015
34. L. Andrianopoli, R. D'Auria, S. Ferrara, A. Marrani and M. Trigiante, "Two-Centered Magical Charge Orbits", JHEP 1104 (2011) 041, doi:10.1007/JHEP04(2011)041
35. W. Chemissany, P. Fre, J. Rosseel, A. S. Sorin, M. Trigiante and T. Van Riet, "Black holes in supergravity and integrability", JHEP 1009 (2010) 080, doi:10.1007/JHEP09(2010)080
36. L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, "Fake Superpotential for Large and Small Extremal Black Holes", JHEP 1008 (2010) 126, doi:10.1007/JHEP08(2010)126
37. P. Fre, P. A. Grassi, L. Sommovigo and M. Trigiante, "Theory of Superdualities and the Orthosymplectic Supergroup", Nucl. Phys. B 825 (2010) 177, doi:10.1016/j.nuclphysb.2009.09.020
38. L. Andrianopoli, R. D'Auria, E. Orazi and M. Trigiante, "First Order Description of D=4 static Black Holes and the Hamilton-Jacobi equation", Nucl. Phys. B 833 (2010) 1, doi:10.1016/j.nuclphysb.2010.02.020
39. W. Chemissany, J. Rosseel, M. Trigiante and T. Van Riet, "The Full integration of black hole solutions to symmetric supergravity theories", Nucl. Phys. B 830 (2010) 391, doi:10.1016/j.nuclphysb.2009.11.013
40. L. Andrianopoli, R. D'Auria, S. Ferrara, P. A. Grassi and M. Trigiante, "Exceptional N=6 and N=2 AdS(4) Supergravity, and Zero-Center Modules", JHEP 0904 (2009) 074, doi:10.1088/1126-6708/2009/04/074
41. J. De Rydt, T. T. Schmidt, M. Trigiante, A. Van Proeyen and M. Zagermann, "Electric/magnetic duality for chiral gauge theories with anomaly cancellation", JHEP 0812 (2008) 105, doi:10.1088/1126-6708/2008/12/105
42. R. D'Auria, P. Fre, P. A. Grassi and M. Trigiante, "Superstrings on AdS(4) x CP**3 from Supergravity", Phys. Rev. D 79 (2009) 086001, doi:10.1103/PhysRevD.79.086001
43. E. Bergshoeff, W. Chemissany, A. Ploegh, M. Trigiante and T. Van Riet, "Generating Geodesic Flows and Supergravity Solutions", Nucl. Phys. B 812 (2009) 343, doi:10.1016/j.nuclphysb.2008.10.023
44. R. D'Auria, P. Fre, P. A. Grassi and M. Trigiante, "Pure Spinor Superstrings on Generic type IIA Supergravity Backgrounds", JHEP 0807 (2008) 059, doi:10.1088/1126-6708/2008/07/059
45. G. Dall'Agata, N. Prezas, H. Samtleben and M. Trigiante, "Gauged Supergravities from Twisted Doubled Tori and Non-Geometric String Backgrounds", Nucl. Phys. B 799 (2008) 80, doi:10.1016/j.nuclphysb.2008.02.020
46. L. Andrianopoli, S. Ferrara, A. Marrani and M. Trigiante, "Non-BPS Attractors in 5d and 6d Extended Supergravity", Nucl. Phys. B 795 (2008) 428, doi:10.1016/j.nuclphysb.2007.11.025
47. L. Andrianopoli, R. D'Auria, E. Orazi and M. Trigiante, "First order description of black holes in moduli space", JHEP 0711 (2007) 032, doi:10.1088/1126-6708/2007/11/032
48. B. de Wit, H. Samtleben and M. Trigiante, "The Maximal D=4 supergravities", JHEP 0706 (2007) 049, doi:10.1088/1126-6708/2007/06/049
49. L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, "Black-hole attractors in N=1 supergravity", JHEP 0707 (2007) 019, doi:10.1088/1126-6708/2007/07/019
50. R. D'Auria, S. Ferrara and M. Trigiante, "On the supergravity formulation of mirror symmetry in generalized Calabi-Yau manifolds", Nucl. Phys. B 780 (2007) 28, doi:10.1016/j.nuclphysb.2007.04.009
51. R. D'Auria, S. Ferrara and M. Trigiante, "Critical points of the Black-Hole potential for homogeneous special geometries", JHEP 0703 (2007) 097, doi:10.1088/1126-6708/2007/03/097
52. P. Fre, F. Gargiulo, J. Rosseel, K. Rulik, M. Trigiante and A. Van Proeyen, "Tits-Satake projections of homogeneous special geometries", Class. Quant. Grav. 24 (2007) 27, doi:10.1088/0264-9381/24/1/003
53. P. Fre' and M. Trigiante, "Twisted tori and fluxes: A No go theorem for Lie groups of weak G(2) holonomy", Nucl. Phys. B 751 (2006) 343, doi:10.1016/j.nuclphysb.2006.06.006

54. R. D'Auria, S. Ferrara and M. Trigiante, "Supersymmetric completion of M-theory 4D-gauge algebra from twisted tori and fluxes", JHEP 0601 (2006) 081, doi:10.1088/1126-6708/2006/01/081
55. B. de Wit, H. Samtleben and M. Trigiante, "Magnetic charges in local field theory", JHEP 0509 (2005) 016, doi:10.1088/1126-6708/2005/09/016
56. P. Fre', F. Gargiulo, K. Rulik and M. Trigiante, "The General pattern of Kac Moody extensions in supergravity and the issue of cosmic billiards", Nucl. Phys. B 741 (2006) 42 doi:10.1016/j.nuclphysb.2006.02.001
57. R. D'Auria, S. Ferrara and M. Trigiante, "Curvatures and potential of M-theory in D=4 with fluxes and twist", JHEP 0509 (2005) 035, doi:10.1088/1126-6708/2005/09/035
58. R. D'Auria, S. Ferrara and M. Trigiante, "E(7(7)) symmetry and dual gauge algebra of M-theory on a twisted seven-torus", Nucl. Phys. B 732 (2006) 389, doi:10.1016/j.nuclphysb.2005.10.020
59. R. D'Auria, S. Ferrara, M. Trigiante and S. Vaula, "N=1 reductions of N=2 supergravity in the presence of tensor multiplets", JHEP 0503 (2005) 052, doi:10.1088/1126-6708/2005/03/052
60. L. Andrianopoli, M. A. Lledo and M. Trigiante, "The Scherk-Schwarz mechanism as a flux compactification with internal torsion", JHEP 0505 (2005) 051, doi:10.1088/1126-6708/2005/05/051
61. B. de Wit, H. Samtleben and M. Trigiante, "The Maximal D=5 supergravities", Nucl. Phys. B 716 (2005) 215, doi:10.1016/j.nuclphysb.2005.03.032
62. R. D'Auria, S. Ferrara, M. Trigiante and S. Vaula, "Scalar potential for the gauged Heisenberg algebra and a non-polynomial antisymmetric tensor theory", Phys. Lett. B 610 (2005) 270, doi:10.1016/j.physletb.2005.01.083
63. R. D'Auria, S. Ferrara, M. Trigiante and S. Vaula, "Gauging the Heisenberg algebra of special quaternionic manifolds", Phys. Lett. B 610 (2005) 147, doi:10.1016/j.physletb.2005.01.084
64. R. D'Auria, S. Ferrara and M. Trigiante, "Homogeneous special manifolds, orientifolds and solvable coordinates", Nucl. Phys. B 693 (2004) 261, doi:10.1016/j.nuclphysb.2004.06.024
65. R. D'Auria, S. Ferrara and M. Trigiante, "C - map, very special quaternionic geometry and dual Kahler spaces", Phys. Lett. B 587 (2004) 138, doi:10.1016/j.physletb.2004.03.009
66. P. Fre, K. Rulik and M. Trigiante, "Exact solutions for Bianchi type cosmological metrics, Weyl orbits of E(8(8)) subalgebras and p-branes", Nucl. Phys. B 694 (2004) 239, doi:10.1016/j.nuclphysb.2004.06.011
67. C. Angelantonj, R. D'Auria, S. Ferrara and M. Trigiante, "K3 x T**2 / Z(2) orientifolds with fluxes, open string moduli and critical points", Phys. Lett. B 583 (2004) 331, doi:10.1016/j.physletb.2003.12.074
68. B. de Wit, H. Samtleben and M. Trigiante, "Maximal supergravity from IIB flux compactifications", Phys. Lett. B 583 (2004) 338, doi:10.1016/j.physletb.2004.01.029
69. M. de Roo, D. B. Westra, S. Panda and M. Trigiante, "Potential and mass matrix in gauged N=4 supergravity", JHEP 0311 (2003) 022, doi:10.1088/1126-6708/2003/11/022
70. C. Angelantonj, S. Ferrara and M. Trigiante, "Unusual gauged supergravities from type IIA and type IIB orientifolds", Phys. Lett. B 582 (2004) 263, doi:10.1016/j.physletb.2003.12.055
71. P. Fre, V. Gili, F. Gargiulo, A. S. Sorin, K. Rulik and M. Trigiante, "Cosmological backgrounds of superstring theory and solvable algebras: Oxidation and branes", Nucl. Phys. B 685 (2004) 3, doi:10.1016/j.nuclphysb.2004.02.031
72. C. Angelantonj, S. Ferrara and M. Trigiante, "New D = 4 gauged supergravities from N=4 orientifolds with fluxes", JHEP 0310 (2003) 015, doi:10.1088/1126-6708/2003/10/015
73. R. D'Auria, S. Ferrara, F. Gargiulo, M. Trigiante and S. Vaula, "N=4 supergravity Lagrangian for type IIB on T**6 / Z(2) in presence of fluxes and D3-branes", JHEP 0306 (2003) 045, doi:10.1088/1126-6708/2003/06/045
74. B. de Wit, H. Samtleben and M. Trigiante, "On Lagrangians and gaugings of maximal supergravities", Nucl. Phys. B 655 (2003) 93, doi:10.1016/S0550-3213(03)00059-2
75. P. Fre, M. Trigiante and A. Van Proeyen, "Stable de Sitter vacua from N=2 supergravity", Class. Quant. Grav. 19 (2002) 4167, doi:10.1088/0264-9381/19/15/319

76. J. F. Morales and M. Trigiante, "Walls from fluxes: An Analytic RG flow", JHEP 0202 (2002) 018, doi:10.1088/1126-6708/2002/02/018
77. M. Bertolini, V. L. Campos, G. Ferretti, P. Fre', P. Salomonson and M. Trigiante, "Supersymmetric three-branes on smooth ALE manifolds with flux", Nucl. Phys. B 617 (2001) 3, doi:10.1016/S0550-3213(01)00467-9
78. M. Bertolini and M. Trigiante, "Microscopic entropy of the most general four-dimensional BPS black hole", JHEP 0010 (2000) 002, doi:10.1088/1126-6708/2000/10/002
79. M. Bertolini and M. Trigiante, "Regular BPS black holes: Macroscopic and microscopic description of the generating solution", Nucl. Phys. B 582 (2000) 393, doi:10.1016/S0550-3213(00)00216-9
80. D. C. Dunbar, B. Julia, D. Seminara and M. Trigiante, "Counterterms in type I supergravities", JHEP 0001 (2000) 046, doi:10.1088/1126-6708/2000/01/046
81. M. Bertolini and M. Trigiante, "Regular RR and NS NS BPS black holes", Int. J. Mod. Phys. A 15 (2000) 5017, doi:10.1142/S0217751X0000207X, 10.1142/S0217751X00002078
82. M. Bertolini, P. Fre and M. Trigiante, "The Generating solution of regular N=8 BPS black holes", Class. Quant. Grav. 16 (1999) 2987, doi:10.1088/0264-9381/16/9/315
83. M. Bertolini, M. Trigiante and P. Fre, "N=8 BPS black holes preserving 1/8 supersymmetry", Class. Quant. Grav. 16 (1999) 1519, doi:10.1088/0264-9381/16/5/305
84. G. Arcioni, A. Ceresole, F. Cordaro, R. D'Auria, P. Fre, L. Gualtieri and M. Trigiante, "N=8 BPS black holes with 1/2 or 1/4 supersymmetry and solvable Lie algebra decompositions", Nucl. Phys. B 542 (1999) 273, doi:10.1016/S0550-3213(98)00797-4
85. G. Dall'Agata, D. Fabbri, C. Fraser, P. Fre, P. Termonia and M. Trigiante, "The $Osp(8|4)$ singleton action from the supermembrane", Nucl. Phys. B 542 (1999) 157, doi:10.1016/S0550-3213(98)00765-2
86. F. Cordaro, P. Fre, L. Gualtieri, P. Termonia and M. Trigiante, "N=8 gaugings revisited: An Exhaustive classification", Nucl. Phys. B 532 (1998) 245, doi:10.1016/S0550-3213(98)00449-0
87. L. Castellani, A. Ceresole, R. D'Auria, S. Ferrara, P. Fre and M. Trigiante, "G / H M-branes and $AdS(p+2)$ geometries", Nucl. Phys. B 527 (1998) 142, doi:10.1016/S0550-3213(98)00304-6
88. L. Andrianopoli, R. D'Auria, S. Ferrara, P. Fre and M. Trigiante, "E(7)(7) duality, BPS black hole evolution and fixed scalars", Nucl. Phys. B 509 (1998) 463, doi:10.1016/S0550-3213(97)00675-5
89. L. Andrianopoli, R. D'Auria, S. Ferrara, P. Fre, R. Minasian and M. Trigiante, "Solvable Lie algebras in type IIA, type IIB and M theories", Nucl. Phys. B 493 (1997) 249, doi:10.1016/S0550-3213(97)00136-3
90. L. Andrianopoli, R. D'Auria, S. Ferrara, P. Fre and M. Trigiante, "RR scalars, U duality and solvable Lie algebras", Nucl. Phys. B 496 (1997) 617, doi:10.1016/S0550-3213(97)00220-4
91. P. Fre, L. Girardello, I. Pesando and M. Trigiante, "Spontaneous N=2 \rightarrow N=1 local supersymmetry breaking with surviving compact gauge group", Nucl. Phys. B 493 (1997) 231, doi:10.1016/S0550-3213(97)00076-X
92. G. Di Cecio, A. Di Giacomo, G. Paffuti and M. Trigiante, "Condensation of vortices in the X-Y model in 3-d: A Disorder parameter", Nucl. Phys. B 489 (1997) 739, doi:10.1016/S0550-3213(97)00019-9

ii. Contributions to books

1. L. Andrianopoli, R. D'Auria, S. Ferrara and M. Trigiante, "Extremal black holes in supergravity", Lect. Notes Phys. 737 (2008) 661, https://doi.org/10.1007/978-3-540-74233-3_22, ISBN 978-3-540-74232-6
2. L. Andrianopoli, R. D'Auria, M. Trigiante and S. Ferrara, "Black holes and first order flows in supergravity", in "Supersymmetry in Mathematics and Physics : Proceedings, UCLA, Los Angeles,

USA, 6 - 7 Feb 2010", Sergio Ferrara (ed.), Rita Fiorese (ed.), VS Varadarajan (ed.), Lect. Notes Math. **2027** (2011) 17. doi:10.1007/978-3-642-21744-9_2

3. A. Gallerati and M. Trigiante, "Introductory Lectures on Extended Supergravities and Gaugings", in "Theoretical Frontiers in Black Holes and Cosmology", Renata Kallosh (ed.), Emanuele Orazi (ed.), Springer Proc. Phys. **176** (2016) 41. doi:10.1007/978-3-319-31352-8_2.

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iii. Conference proceedings

1. L. Andrianopoli, R. D'Auria and M. Trigiante, "Issues on Black Holes in Four Dimensional Supergravity", in "Proceedings, INFN-Laboratori Nazionali di Frascati School on the Attractor Mechanism on Supersymmetric Gravity and Black Holes (SAM 2009) : Frascati, Italy, 29 Jun - 3 Jul, 2009", Stefano Bellucci (ed.), Springer Proc. Phys. **142** (2013) 143. doi:10.1007/978-3-642-31380-6_4
2. W. Chemissany, P. Fre, J. Rosseel, A. S. Sorin, M. Trigiante and T. Van Riet, "Brane solutions and integrability: a status report", in "Proceedings, Spanish Relativity Meeting: Gravity as a crossroad in physics (ERE 2010) : Granada, Spain, September 6-10, 2010", Victor Aldaya (ed.), Carlos Barcelo (ed.), Jose Luis Jaramillo (ed.), J. Phys. Conf. Ser. **314** (2011) 012040, doi:10.1088/1742-6596/314/1/012040
3. M. Trigiante, "N=2 supergravity from generalized Calabi-Yau compactifications", in "Lie theory and its applications in physics. Proceedings, 7th International Workshop, Varna, Bulgaria, June 18-24, 2007", H.D. Doebner (ed.), V.K. Dobrev (ed.), Bulg. J. Phys. **35** (2008) 99, ISBN: 978-954-580-240-9.
4. M. Trigiante, "Dual gauged supergravities", in proceedings of the 17th SIGRAV Conference , 4-7 Sep 2006. Turin, Italy. Eds. G. Esposito, G. Lambiate, G. Marmo, G. Scarpetta, G. Vilasi (AIP751). CNUM: C06-09-04.2
5. R. D'Auria, S. Ferrara and M. Trigiante, "Spontaneously broken supergravity: Old and new facts", in the proceedings of the "4th International Symposium on Quantum Theory and Symmetries and 6th International Workshop on Lie Theory and Its Applications in Physics (LT-6 / QTS-4), 15-21 Aug 2005. Varna, Bulgaria", V.K. Dobrev (ed.), Bulg. J. Phys. **33** (2006) 230-244, CNUM: C05-08-15.4
6. M. Trigiante, "Gauged extended supergravities from flux compactifications: an N=2 example", in "The quantum structure of space-time and the geometric nature of fundamental interactions. Proceedings, 4th Meeting, RTN2004, Kolymbari, Crete, Greece, September 5-10, 2004, E. Kiritsis (ed.)", Fortsch. Phys. **53** (2005) 984. doi:10.1002/prop.200410247
7. R. D'Auria, S. Ferrara and M. Trigiante, "No-scale supergravity from higher dimensions", in proceedings of the "Annual International Conference on Strings, Theory and Applications (Strings 2004), 28 Jun - Jul 2, 2004. Paris, France, I. Antoniadis (ed.)", Comptes Rendus Physique **6** (2005) 199, doi:10.1016/j.crhy.2004.12.010
8. R. D'Auria, S. Ferrara and M. Trigiante, "Orientifolds, brane coordinates and special geometry", in "Deserfest: A celebration of the life and works of Stanley Deser. Proceedings, Meeting, Ann Arbor, USA, April 3-5, 2004, J.T. Liu (ed.), M.J. Duff (ed.), K.S. Stelle (ed.), R.P. Woodard (ed.)", DeserHackensack, World Scientific, 2006. 380p, ISBN: 981-256-082-3
9. B. de Wit, H. Samtleben and M. Trigiante, "Gauging maximal supergravities", in "Theory of elementary particles. Proceedings, 36th International Symposium Ahrenshoop, Berlin, Germany, August 26-30, 2003, Harald Dorn (ed.), D. Lust (ed.)", Fortsch. Phys. **52** (2004) 489, doi:10.1002/prop.200410135

10. L. Andrianopoli, S. Ferrara and M. Trigiante, "Fluxes, supersymmetry breaking and gauged supergravity", in "Search for SUSY and unification. Proceedings, International Conference, 20 years of SUGRA, SUGRA20, Boston, USA, March 17-21, 2003", P. Nath (ed.), CNUM: C03-03-17.1
11. P. Fre', M. Trigiante and A. Van Proeyen, "N=2 supergravity models with stable de Sitter vacua", in "Quantum structure of spacetime. Proceedings, European Workshop, Leuven, Belgium, September 13-19, 2002, M. Billo (ed.), M. Henneaux (ed.), A. Sevrin (ed.), S. Theisen (ed.), W. Troost (ed.), S. Vandoren (ed.), Antoine Van Proeyen (ed.)", *Class. Quant. Grav.* **20** (2003) S487, doi:10.1088/0264-9381/20/12/314
12. M. Bertolini, V. L. Campos, G. Ferretti, P. Salomonson, P. Fre' and M. Trigiante, "BPS three-brane solution on smooth ALE manifolds with flux", *Fortsch. Phys.* **50** (2002) 802. doi:10.1002/1521-3978(200209)50:8/9<802::AID-PROP802>3.0.CO;2-E
13. M. Bertolini and M. Trigiante, "Microscopic entropy of the most general BPS black hole for type II/M-theory on torii", in "The quantum structure of space-time and the geometrical nature of fundamental interactions. Proceedings, 1st Workshop, 34th International Symposium Ahrenshoop on the theory of elementary particles, Berlin, Germany, October 4-10, 2000, E.A. Bergshoeff (ed.), Anna Ceresole (ed.), C. Kounnas (ed.), D. Lust (ed.), A. Sevrin (ed.)", *Fortsch. Phys.* **49** (2001) 657, doi: 10.1002/1521-3978(200105)49:4/6<657::AID-PROP657>3.0.CO;2-Z
14. Z. Bern, L. J. Dixon, D. Dunbar, B. Julia, M. Perelstein, J. Rozowsky, D. Seminara and M. Trigiante, "Counterterms in supergravity", in "Proceedings, Conference on Nonperturbative quantum effects : Paris, France, September 7-13, 2000, Denis Bernard (ed.), Lorian Bonora (ed.), Giuseppe Mussardo (ed.), Edward Corrigan (ed.), Cesar Gomez (ed.), Werner Nahm (ed.), Bernard Julia (ed.)", *PoS tmr* **2000** (2000) 017, Conference: C00-09-07.1
15. M. Bertolini and M. Trigiante, "Four-dimensional BPS black holes: Macroscopic and microscopic correspondence", in "Proceedings, Conference on Nonperturbative quantum effects : Paris, France, September 7-13, 2000, Denis Bernard (ed.), Lorian Bonora (ed.), Giuseppe Mussardo (ed.), Edward Corrigan (ed.), Cesar Gomez (ed.), Werner Nahm (ed.), Bernard Julia (ed.)", *PoS tmr* **2000** (2000) 018, Conference: C00-09-07.1
16. M. Bertolini and M. Trigiante, "The most general BPS black hole from type II string theory on a six-torus: The macroscopic - microscopic correspondence", in "Recent developments in theoretical and experimental general relativity, gravitation and relativistic field theories. Proceedings, 9th Marcel Grossmann Meeting, MG'9, Rome, Italy, July 2-8, 2000. Pts. A-C, V.G. Gurzadian (ed.), R.T. Jantzen (ed.), R. Ruffini (ed.)", Singapore: World Scientific (2002) 2529 p, ISBN-10: 9812389946, ISBN-13: 978-9812389947
17. M. Trigiante, "Branes in Anti-de Sitter space-time", *Recent developments in general relativity. Proceedings, 13th Italian Conference on General Relativity and Gravitational Physics, Monopoli, Bari, Italy, September 21-25, 1998, B. Casciaro (ed.), D. Fortunato (ed.), M. Francaviglia (ed.), A. Masiello (ed.)*, Springer, 2000. 521p. ISBN: 88-470-0068-8
18. G. Dall'Agata, D. Fabbri, C. Fraser, P. Fre, P. Termonia and M. Trigiante, "The Singleton action from the supermembrane", in "Quantum aspects of gauge theories, supersymmetry and unification. Proceedings, 2nd International Conference, Corfu, Greece, September 20-26, 1998, Anna Ceresole (ed.), C. Kounnas (ed.), D. Lust (ed.), S. Theisen (ed.)", *Lect. Notes Phys.* **525** (1999) 339, doi:10.1007/BFb0104253
19. P. Fre, L. Girardello, I. Pesando and M. Trigiante, "Partial N=2 ---> N=1 local supersymmetry breaking and solvable Lie algebras", in "Gauge theories, applied supersymmetry and quantum gravity. Proceedings, 2nd Conference, London, UK, July 5-10, 1996, A. Sevrin (ed.), K.S. Stelle (ed.), K. Thielemans (ed.), Antoine Van Proeyen (ed.)", doi:10.1142/9781848160927_0018
20. G. Di Cecio, A. Di Giacomo, G. Paffuti and M. Trigiante, "Condensation of vortices in the X-Y model in 3-d: A Disorder parameter", in "Lattice'96. Proceedings, 14th International Symposium on Lattice Field Theory, St. Louis, USA, June 4-8, 1996, C. Bernard (ed.), M. Golterman (ed.), M. Ogilvie (ed.), J. Potvin (ed.)", *Nucl. Phys. Proc. Suppl.* **53** (1997) 584, doi:10.1016/S0920-5632(96)00725-6

iv. Books

1. R. D'Auria, M. Trigiante, "From Special Relativity to Feynman Diagrams: A Course of Theoretical Particle Physics for Beginners", about 600 pages, First Edition, Springer 2012; Second Edition, Springer 2016 (hard cover). ISSN 2198-7882, ISBN 978-3-319-22013-0, DOI 10.1007/978-3-319-22014-7. There is also an electronic version and a Chinese edition of this book.
It has been recommended as STANDALONE book on QED for the course "Introduction to Quantum ElectroDynamics" by Dott. Stefano Rigolin at the University of Padova.