

# CURRICULUM VITAE

## JORGE GUILLERMO RUSSO

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**Place of birth:** Buenos Aires, Argentina.

**Nationalities:** Italian and Argentine.

**Languages:** Spanish, english, italian, french and catalan.

**Current position:**

- ICREA Research Professor, Departament ECM, Facultat de Física, University de Barcelona.

**Education:**

- 8/82–12/86: Licenciatura in Physics, Instituto Balseiro, Centro Atómico Bariloche, Argentina.
- 1/87–10/87: Courses at SISSA on Quantum Field Theory, Particle Physics, Group Theory, Algebraic Geometry, String Theory, etc.
- 1/87–10/90: PhD at SISSA (International School for Advanced Studies), Trieste. Supervisor: Prof. D. Amati.

**Fellowships and Awards:**

- Fellowship of the National Commission for Atomic Energy of Argentina (CNEA) at the Instituto Balseiro in Bariloche, Argentina (awarded after a nationwide selection exam) (7/82 – 12/86).
- PhD Fellowship from SISSA, Trieste, Italy (1/87–10/90).

**Academic Appointments:**

- Department of Physics, STANFORD UNIVERSITY, 10/90–8/92.
- Theory Group, Department of Physics, UNIVERSITY of TEXAS, Austin, 9/92–8/94.
- Theory Division, CERN, Geneva, 9/94–12/96.
- Theoretical Physics Group, IMPERIAL COLLEGE, London, 1/97–11/98.
- Department of Physics, UNIVERSITY of BUENOS AIRES and Conicet, Buenos Aires, 12/98–03/03.
- Regular Scientific Associate, International Centre for Theoretical Physics (ICTP) Trieste, Italy, Jul – Sep 2001.
- CERN Scientific Associate, European Organization for Nuclear Research (CERN), Geneva, Switzerland, Oct 2002 – Mar 2003.

## Teaching experience

- Lecturing various courses by invitation (see details in next pages).
- 1998–2002: Professor at Department of Physics, University of Buenos Aires. Courses: Física I, Física II, General Relativity, Introduction to Superstring Theory.
- 94–97: PhD thesis Supervisor (Dr. A. Fabbri) at SISSA, Trieste. PhD Thesis Title: "Accelerated black holes and the end-point of Hawking evaporation in two-dimensional theories of gravity".
- Supervisor of special PhD work (DEA) by Juan Rojo, Universitat de Barcelona (2004). Thesis title: "Classical solutions of spinning membranes and spinning matrices".
- Supervisor of special PhD work (DEA) by Jan Brugues, Universitat de Barcelona (2004). Thesis title: "Non-perturbative type II string states from classical spinning membranes".
- Supervisor of special PhD work (DEA) by Toni Ramirez, Universitat de Barcelona (2004). Thesis title: "Removing closed time-like curves in Gödel Universes".
- Supervisor of "Stage de recherche" (MIP) at Universitat de Barcelona by Ronan Bourgeois (Ecole Normale Supérieure de Paris) (2005). Thesis title: "From strings to bubbles".
- Master's thesis Supervisor (Idse Heemskerk) (ITP, University of Amsterdam) (2007). Thesis Title: "Black hole decay".
- 2009–2013: PhD thesis Supervisor (Dr. Francesco Aprile) at University of Barcelona. PhD Thesis Title: "Applied Gauge/Gravity Duality: from Supergravity to Superconductivity" (sept 2013).
- 2010–2014: PhD thesis Supervisor (Dr. Alejandro Barranco) at University of Barcelona. PhD Thesis Title: "Applications of Supersymmetry: Exact Results, Gauge/Gravity Duality and Condensed Matter" (oct 2014).
- 2012–2016: Graduate thesis Supervisor of several students at University of Barcelona (Xavier Ramos Olive, Victor Campello, Marti Rosello Gomez, Eloi Lanau Rosello).
- 2014–2015: Master thesis Supervisor (R. Massachs), University of Barcelona. Title: "Emission spectrum and inclusive cross section of strings" (jul 2015).
- 2010–2015: PhD thesis Supervisor (Dr. Aldo Dector Oliver) at University of Barcelona. PhD Thesis Title: "AdS/CFT Correspondence and Superconductivity: Various Approaches and Magnetic Phenomena" (oct 2015).
- 2014–2015: Master thesis Supervisor (D. Not), University of Barcelona. Title: "Non-relativistic limits of extended objects" (Jun 2016).
- 2014–2015: Master thesis Supervisor (A. Liaghat), University of Barcelona. Title: "Orbits of Electrically Charged Particle in Magnetic Reissner-Nordstrom Metric" (sep 2016).
- 2014–2015: Master thesis Supervisor (G. Valocchi), University of Barcelona. Title: "Matrix Models and Confinement" (sep 2016).
- 2019-2020: Master thesis Supervisor (B. Monfort Urkizu), University of Barcelona. Title: "Conformal Boundary Anomalies on Anti-De Sitter Space and Spheres" (Jan 31, 2020).

- 2020: Graduate thesis Supervisor of two students at University of Barcelona: Arnau Ivern Sala, “Study on quantum corrections of the Raychaudhuri equation” (30 Jun 2020) and Javier Rueda, “Circular Orbits for Schwarzschild Anti-de Sitter Black Hole” (29 Jun 2020).
- 2020-2021: Master thesis Supervisor (Arnoldo Guerra), University of Barcelona. Title: “The Covariant Constraint Analysis of Field Theories in the Multisymplectic Formalism” (Jul 2, 2021).
- 2022-2024: Master thesis Supervisor (Reza Pourkhodabakhshi), University of Barcelona. Title: “Shadow curves and quasinormal modes for black holes surrounded by dark matter, radiation and dust” (28 Jun 2024).
- 2025 - Present. PhD thesis Supervisor (Mickael Komendyak), University of Barcelona (Mickael Komendyak obtained a Joan Oró FI fellowship from the Generalitat de Catalunya with my research project. Ref: 2025 FI-1 01300).

### Other scientific activities:

- Referee of the following scientific journals: 1) Physical Review Letters; 2) Physical Review D; 3) JHEP; 4) Classical and Quantum Gravity.
- Member of the Organizing committee of the RTN “Winter School on Strings, Supergravity and Gauge Fields”, Barcelona 12-16 January 2004.
- Editor of the Proceedings of the RTN “Winter School on Strings, Supergravity and Gauge Fields”, (Classical and Quantum Gravity, 22 (2005)).
- Referee for Research proposals for NSF, USA (2002–2006).
- Referee for Consejo Nacional de Investigaciones Científicas y Técnicas (Conicet), Argentina (1998–2002).
- Referee of scientific projects PICT for Secretaría de Ciencia y Técnica (SECyT), Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT), Argentina (2004–2015).
- Member of the Committee for various PhD Thesis (1996 – 2015).
- Member of the Committee for graduation thesis at University of Buenos Aires (1998–2002).
- Reader for the European Joint postdoc applications related to theories on the unification of fundamental interactions (Leuven, dec 2010).
- Member of the Scientific Advisory committee for the Conference “XVIIth European Workshop on String Theory” (sep 2011).
- Evaluator of Sistema Nacional de Becas (SNB 2014). Agencia Nacional de Investigacion e Innovacion (ANII) (2014).
- Member of the Committee for graduation thesis and Master thesis at University of Barcelona (2012–2024).
- Co-Organizer (w/ Peter West, King’s College, London) of the Workshop “Gauge theories, supergravity and superstrings, 2015, Aug 02 – Aug 15, at Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.

- Member of the Organizing committee of the Conference “Symmetries in Particles and Strings”, at ICCUB – Department ECM, Facultat de Física, Universitat de Barcelona, September 4th, 2015.
- Evaluator for funding proposals appointed by Fund for Scientific Research - FNRS, Belgium (2015-2016).
- Member of Evaluation Panel for scientific projects for FWF Austrian Science Fund (Fonds zur Forderung der wissenschaftlichen Forschung).
- Member of the Scientific Advisory committee for the “6th Bangkok Workshop on High-Energy Theory” (9-13 Jan 2017).
- Co-Organizer (w/ Peter West, King’s College, London) of the Workshop “Gauge theories, Supergravity and Superstrings, 2017, Jun 11 – Jun 23, at Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.
- Member of the examination committee for a PhD Thesis at University of Barcelona. PhD recipient: Genis Torrents (June 27, 2016).
- Member of the examination committee for a PhD Thesis at Uppsala University. PhD recipient: Xinyi Chen-Lin (Sep 4, 2017).
- Co-Organizer of the Workshop “Supersymmetric Quantum Field Theories in the non perturbative Regime”, Apr, 02 2018 – May, 11 2018, at The Galileo Galilei Institute for Theoretical Physics (GGI), Florence, Italy.
- Member of the Scientific Advisory committee for the “8th Bangkok Workshop on High-Energy Theory” (7-11 Jan 2019).
- Co-Organizer (w/ Peter West, King’s College, London) of the Workshop “Gauge theories, Supergravity and Superstrings, 2019, Jun 9 – Jun 21, at Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.
- Evaluator for funding proposals appointed by Fund for Scientific Research - FNRS, Belgium (2017-2020).
- Member of the examination committee for a PhD Thesis at University of Barcelona. PhD recipient: Luciano Gabbanelli (Nov 4, 2019).
- Member of the Academic Board for a competition of “Contracted Doctor” position at Physics Department of Universidad de Oviedo (29 Nov 2019).
- Member of the examination committee for a PhD Thesis at Università degli Studi di Torino, Italy. PhD recipient: Francesco Galvagno (Apr 16, 2020).
- Co-Organizer (w/ K. Iwasawa, ICC, Barcelona) of internal seminars in the Institute of Cosmos Science, Universitat de Barcelona (2020-2021).
- Evaluator for funding proposals appointed by Fund for Scientific Research - FNRS, Belgium (March-Sept 2021).
- Referee for “Consolidation grants” appointed by European Research Council (ERC) (Nov-Dec 2021).
- Co-Organizer (w/ Peter West, King’s College, London) of the Workshop “Gauge theories, Supergravity and Superstrings, 2022, Jun 20 – Jun 30, at Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.

- Member of the examination committee for a PhD Thesis at Universitat de Barcelona. PhD recipient: Alan Rios Fukelman (July 6, 2022).
- Member of the examination committee for a PhD Thesis at Universidad de Oviedo. PhD recipient: María Anayeli Ramirez (Sept 28, 2022).
- Member of Evaluation Panel for funding proposals appointed by Fund for Scientific Research - FNRS, Belgium (April-August 2022).
- Member of Evaluation Panel for the Agencia Estatal de Investigación, Ministerio de Ciencia e Innovación, Spain (March-May 2022).
- Member of the examination committee for a PhD Thesis at Universitat de Barcelona. PhD recipient: Carlos Heredia Pimienta (31 Mar 2023).
- Member of the examination committee for a PhD Thesis at Universitat Politcnica de Catalunya. PhD recipient: Vctor M. CAMPELLO (08 Jul 2024).
- External Referee for a PhD Thesis at the University of Florence. PhD recipient: Tommaso Canneti (03 Dec 2024).
- Member of Evaluation Panel for funding proposals appointed by Fund for Scientific Research - FNRS, Belgium (March 2023-Sep 2024).
- Member of Evaluation Panel for the Agencia Estatal de Investigación, Ministerio de Ciencia e Innovación, Spain (October-December 2024).
- Management Committee of Research Programme for European Project COST (European Cooperation in Science and Technology). COST Action CA22113 - THEORY-CHALLENGES (02 Oct 2023 - 01 Oct 2026).

#### Invited Lectures:

- Lectures on “D branes and Black holes”, Theory Division, CERN, Geneva, May 1996.
- Lecturing course: “ $D = 11$  Supergravity and M-Theory”, Imperial College, London, 1997.
- Invited Lecturer in the “Winter School APCTP 1997”, Sokcho, Korea, February 1997.
- Invited Lecturer in SILAFAE III, Cartagena, Colombia, April 2–8 2000. Title of the course: “Large N field theories from superstrings”.
- Invited Lecturer in “Escuela Latino-Americana de Cuerdas LASS 2000”, Mexico D.F., October 9 – 27 2000. Title of the course: “AdS/CFT correspondence”.
- Invited Lecturer in the “Winter School APCTP 2000”, Seoul, Korea, 11–16 December 2000. Title: “Supergravity description of noncommutative Gauge Theories”.
- Course “Introduction to Superstring Theory”, Universitat de Barcelona (Sept–Dic 2003).
- Course “Introduction to Superstring Theory”, University of Santa Clara, Cuba (17–21 Nov 2003).
- Invited Lecturer in “Large N QCD 2004”, 5–9 July, ECT\* Trento, Italy. Title: “Large N QCD spectrum from superstrings”.

- Lecture on “Black hole information problem”, Institute for Studies in Theoretical Physics and Mathematics (IPM), Tehran, Iran (12 – 24 april 2005).
- Course “Introduction to Supersymmetry”, at the International School in Quantum Gravity, Departamento de Física, Universidad Nacional de La Plata, Argentina (19 – 27 July 2010).
- Course “Introduccion to Superstring theory”, Escuela de Fisica, Universidad de Costa Rica, Mar 2014.
- Course “Advanced Topics in Superstring theory”, at the Departamento de Física, Universidad de Buenos Aires, Argentina (Nov 2015).
- Course “D branes in backgrounds with magnetic fluxes” for the cycle “Lectures on Advanced Topics of High Energy Physics, Fifth Edition: Gravity, Strings and Branes”, Centro Científico y Tecnológico, CONICET, La Plata, Argentina (Dec. 2015).
- Course “Supersymmetric localization and applications to gauge theory”, Department of Physics, University of La Plata, La Plata, Argentina (Dec. 2016).
- Course “Introduction to Supersymmetric localization”, Department of Physics, Chulalongkorn University, Bangkok, Thailand (Feb 2018).

### Invited Conferences and Seminars

- Invited Seminar. Theory Group, Stanford Linear Accelerator (SLAC). “Information problem in black holes”, March 1992.
- Invited Speaker in the “Summer School on String Theory”, ICTP, Trieste, July 1994. Title of talk: “Asymptotic level density in heterotic string theory and rotating black holes”.
- Invited Speaker in the Conference: “Quantum Gravity and Black Holes”, LPT Ecole Normale Supérieure, Paris, November 1996.
- Invited Speaker in the Conference: “Non perturbative aspects of strings, branes and fields”, CERN, Geneva, December 8-12, 1997.
- Invited Speaker in the Workshop: “III Christmas Workshop on Particle Physics”, IFT-UAM, December 17-19, 1997.
- Invited Speaker in the Conference: “Quantum Gravity in the Southern Cone II”, Bariloche, Argentina (January 1998).
- Invited Speaker in the Conference: “ICTP Conference on Black hole Physics”, Trieste, Italy, 12-16 July 1999.
- Invited Plenary conference in the 1999 AFA annual meeting, Argentina, 20-24 Sept 1999. Title: “New Perspectives in Superstring Theory”.
- Invited Speaker in the Conference: “Strings 2001”, Bombay, India, 5-10 January. Title of talk: “Free Energy and Critical Temperature in eleven dimensions”.
- Invited Colloquium: “Current status of the Unification program”, March 2001, Centro Atómico Bariloche, Argentina.

- Invited Seminar: “Dualities from fluxbranes”, CalTech, USA, september 2001.
- Invited Speaker in the Conference: “Quantum Gravity in the Southern Cone III”, Valdivia, Chile, January 2002.
- Invited Seminar: “The decay of massive closed strings”, CERN, January 14, 2003.
- Invited Seminar: “Semiclassical decay of strings with maximum angular momentum”, University of Santiago de Compostela, June 4, 2003.
- Invited Speaker in the RTN Workshop “Quantum Structure of Space-Time and the Geometric Nature of Fundamental Interactions”. Copenhagen, Denmark, 15–20 Sep, 2003. Title of talk: “Spinning strings in AdS(5) x S(5) and integrable systems”.
- Invited Seminar: “Integrable Structures in AdS/CFT Duality”, ITP, Utrecht University, 5 Dec 2003.
- Invited Speaker at the Workshop: “Christmas Workshop on Particle Physics”, IFT-UAM, Madrid December 15-17, 2003. Title: “Integrable Structures in the AdS/CFT correspondence”.
- Invited Seminar: “Integrable Structures in AdS/CFT Duality”, U. Autònoma Barcelona, Jan 19, 2004.
- Invited Speaker at the meeting: “VI Encuentro de Strings”, IAFE and University of Buenos Aires, 29 march 2004, Buenos Aires. Title: “Large Nc QCD from Superstrings: A survey”.
- Invited Seminar: “Large Nc QCD from Superstrings”. ICTP, Trieste, Italy, Sep 21, 2004.
- Invited Speaker. “ERES 2004”, XXVII Spanish Relativity Meeting, 23–25 Sept 2004, Miraflores de la Sierra, Madrid, Spain. Title: “Information problem in black hole evaporation: Old and recent result”.
- Invited Colloquium, CERN, Geneva, 13 oct 2004. Title: “Information problem in black hole evaporation”.
- Invited Seminar at Physics Department, Theoretical Division, Università degli Studi di Milano, Dec 9 2004, Milan. “D-Instanton effects in string amplitudes”.
- Invited Seminar at Physics Department, Università degli Studi di Bologna, May 12, 2005, Bologna. “Information problem in black hole evaporation”.
- Invited Seminar at PERIMETER Institute (Waterloo, Canada), Jun 14 2005. “Strong magnetic limit of string theory”.
- Invited Speaker at the Conference “Quantum field theory under the influence of external conditions”, IEEC, CSIC and University of Barcelona (Barcelona, Sep 5–9 2005). Title of talk: “Superstring theory in magnetic fields”.
- Invited talk at the Conference “Jornadas de Física Bariloche 2005”, Instituto Balseiro, Bariloche, Argentina (dec 19–21 2005). Title of the talk: “String theory corrections to Einstein-Hilbert action”.
- Invited talk at the Conference “Gravity, Strings and Gauge Theories”, Santiago de Compostela, Feb 8–11 2006. Title: “Semiclassical physics of string decay”.
- Invited Seminar at Institute for Theoretical Physics, University of Amsterdam (The Netherlands). May 10 2006.

- Invited Seminar at Theoretical Physics Group, Imperial College, London, June 15, 2006. “Non-renormalisation conditions in type II string theory”.
- Invited Speaker at the 2nd International Conference on Quantum Theories and Renormalization Group in Gravity and Cosmology (IRGAC 2006), Barcelona, July 2006. Title: “Black hole formation from the collision of cosmic fundamental strings”.
- Invited Speaker at the Meeting: XXXVIeme Institute d’ é té, “Interactions fondamentales et la structure del l’espace-temps”, Aug 2006, Paris. Title: “Cosmic string decay and black hole formation”
- Invited Seminar at Physics Department, University of Parma, sep 19 2006, Parma, Italy. “Large N gauge theories from superstrings”.
- Invited Seminar at Instituto de Física Teórica, Universidad Autonoma de Madrid, Jan 24, 2007. “Non-renormalization theorems in type II string theory and maximal supergravity”.
- Invited Seminar at Theory Division, CERN, Geneva, Feb 5 2007. “Non-renormalization theorems in type II string theory and maximal supergravity”
- Invited Seminar at Niels Bohr Institute, University of Copenhagen, Denmark, March 15 2007.
- Invited Colloquium at Departament de Filologia i Filosofia, Universitat de Girona, April 12 2007. Title: “Nuevas Perspectivas en Teorias de Unificación”.
- Invited Speaker at the Conference “Trends in Theoretical Physics IV”, Centro de Fisica y Matematica de America del Sur (CEFIMAS), May 1–5 2007, Buenos Aires. “Non-renormalization theorems in type II string theory and maximal supergravity”.
- Invited Seminar at Physique mathématique des interactions fondamentales, Faculté des Sciences Université Libre de Bruxelles, Belgium, May 23 2007.
- Invited Speaker at the GGI Workshop: “String and M theory approaches to particle physics and cosmology”, Enrico Fermi Institute, Florence, Italy. June 13–15, 2007. “The structure of the type II effective action”.
- Invited Speaker at the Conference: “Strings 2007”, Instituto de Fisica Teorica, Universidad Autonoma de Madrid, June 25–29 2007, Madrid. Title: “The quantum structure of the type II effective action and UV behavior of maximal supergravity”.
- Invited Speaker at the Conference: “Strings, Branes and Cosmology”, July 9–13 2007, Koc University, Istanbul, Turkey. Title: “UV behavior of maximal supergravities from M-theory”.
- Invited Speaker at the Workshop: “Ten years of AdS/CFT”, Buenos Aires, Dec 19–21 2007. Title: “New non-abelian effects on D branes”.
- Invited Speaker at the Meeting: “January Superstring meeting” Oviedo, Jan 9–10 2008. Title: “New non-abelian effects on D branes”.
- Invited Seminar at Perimeter Institute, Waterloo, Canada: May 2008. Title: “String theory from supergravity and supergravity from string theory ”.
- Invited Speaker at the Meeting: “Wonders of Gauge Theory and Supergravity ” ENS, Paris, June 23–27 2008. Title: “Type II string effective action and UV behavior of N=8 supergravity ”.

- Invited Speaker at the Meeting: “String Theory Workshop 2008” Amsterdam, The Netherlands, July 7th –10th 2008. Title: “Quantum structure of Superstring effective action”.
- Invited Seminar at SISSA, Trieste, Italy: July 16 2008. Title: “Type II string effective action and UV behavior of N=8 supergravity”.
- Invited Speaker at “5th Workshop on Gravitational Aspects of Strings and Branes”, Gijón, February 2009. Title: “Schwinger pair creation in Gravity and in closed Superstring Theory”.
- Invited Plenary Speaker at “First Mediterranean Conference on Classical and Quantum Gravity” Kolymbari (Crete, Greece) September 14-18, 2009. Title: “On the thermodynamics of moving bodies”.
- Invited Seminar at Scuola Normale Superiore, Pisa, Italy: Dec 15 2009. Title: “Ultraviolet properties of maximally supersymmetric gauge and gravity theories from superstring theory”.
- Invited Seminar at Scuola Normale Superiore, Pisa, Italy: Dec 15 2009. Title: “Ultraviolet properties of maximally supersymmetric gauge and gravity theories from superstring theory”.
- Invited Seminar at the Physics department, Università degli Studi di Torino, Torino, Italy: 6 April 2010. Title: “Dualities in superstring theory and supergravity divergences”.
- Invited Seminar at the Physics department, Università degli Studi di Genova, Genova, Italy: 8 April 2010. Title: “String theory dualities and supergravity divergences”.
- Invited Speaker at the Meeting “Quantum Gravity in the Southern Cone V”, Buenos Aires, Argentina : July 28–30, 2010. Title: “Three perspectives on ultraviolet divergences in maximal supergravities”.
- Invited Seminar at Max-Planck-Institut für Gravitationsphysik, Albert-Einstein-Institut, Potsdam, Germany: 2 November 2010. Title: “Automorphic properties of string theory and supergravity divergences”.
- Invited Seminar at the Centre for Theoretical Physics, University of Groningen, Groningen, The Netherlands: 25 November 2010. Title: “Holographic superconductors and gauged supergravity”.
- Invited Seminar at London Triangle Seminar (Queen Mary, University of London). 16 March 2011. Title: “Holographic superconductors from gauged supergravity”.
- Invited Seminar at NORDITA (Nordic Institute for Theoretical Physics), Stockholm, Sweden: 16 May 2011. Title: “Holographic superconductors from gauged supergravity”.
- Invited Speaker at Workshop “String Theory, Gravity, and Fields”, IAFE - Institute of Astronomy and Space Physics (CONICET-UBA) Buenos Aires, Aug 2011.
- Invited Seminar at Department of Physics, Purdue University, USA, “Holographic superconductors from gauged supergravity”, Nov 2011.
- Invited Seminar at Perimeter Institute for Theoretical Physics, Waterloo, Canada. “Perturbation series in supersymmetric gauge theories”, 20 April 2012.
- Invited Seminar at Department of Physics, University of Michigan, Ann Arbor, USA. “New minimal holographic superconductors from gauged supergravity”. 23 April 2012.
- Invited Seminar at Perimeter Institute for Theoretical Physics, Waterloo, Canada. “Large N limit of super Yang-Mills theories from localization”. 28 Sept 2012.

- Invited Seminar at Universidad de Santiago de Compostela, Spain. “Large N limit of super Yang-Mills theories from localization”. 24 Oct 2012.
- Invited Seminar “Wilson loops and perturbation series in supersymmetric Yang-Mills theories” Department of Physics, University of Buenos Aires, Apr 1st, 2013.
- Invited Speaker at Congress “Trends in Theoretical Physics V”, Universidad Nacional de La Plata, Argentina. Title of talk: “Evidence for Large-N Phase Transitions in  $N = 2^*$  Theory”. 10 April 2013.
- Invited Seminar at Instituto Superior Tecnico, Lisbon, Portugal. “Large N Limit of supersymmetric Gauge Theories from Localization”. april 30 2013.
- Invited Speaker at Conference “Strong Fields, Strings and Holography”, Department of Physics, Swansea University, Singleton Park, Swansea, UK. Title of talk: “Large N Limit of supersymmetric Gauge Theories from Localization”.
- Invited Speaker at Conference “Quantum Gravity in the Southern Cone VI”, ICTP South American Institute for Fundamental Research, Sao Paolo, Brazil. “Large N Phase Transitions in massive  $N = 2$  Gauge Theories”. 12 Sep, 2013.
- Invited Plenary Speaker at Russian-Spanish Congress “Particle and Nuclear Physics at all scales, Astroparticle Physics and Cosmology”. V. A. Fock Department of Theoretical Physics, Saint-Petersburg State University, Russia. 4 Oct, 2013.
- Invited Seminar at International Centre for Theoretical Physics (ICTP), Trieste, Italy. “Large N phase transitions in supersymmetric Chern-Simons theory with massive matter”. 18 Feb, 2014.
- Invited Speaker at Conference “Supersymmetric Field Theories”, Nordita Institute, Stockholm, Sweden. “Large N phase transitions in supersymmetric gauge theories with massive matter”. 14 Aug, 2014.
- Invited Speaker at Workshop “String theory and its applications”, Mainz Institute for Theoretical Physics, Germany. “Localization in supersymmetric gauge theories: exact results and some applications”. 18 Sep, 2014.
- Invited Speaker at Workshop “LX Meeting of the Strings@ar Network”, Centro Cientifico y Tecnologico de La Plata (CCT), Argentina. “ $\mathcal{N} = 2$  gauge theories and quantum phases”. 26 Nov, 2014.
- Invited Speaker at Conference “Aspects of Gauge and string theories”, SISSA, Trieste, Italy. “ $N=2$  gauge theories and quantum phases”. 2 Jul, 2015.
- Invited Speaker at Conference “Physics on the Riviera 2015: an isthmus between high energy and condensed matter theoretical physics”, Sestri Levante, Italy. “Large N from Localization and Large N from Seiberg-Witten”. 16-18 September 2015.
- Invited Seminar at Physics Department, University of Torino (March 15, 2016). Title of talk: “Phases of  $N = 2$  theories with massive matter”.
- Invited Speaker at Conference “Resurgence in Gauge and String Theories 2016”, Lisbon, Portugal July 18-22 2016. Title of talk: “Supersymmetric Gauge Theories and Resurgence”.
- Invited Speaker at Conference “Post Strings” July 2-11, 2017, Weizmann Institute of Science, Israel. Title of talk:  $\mathcal{N} = 2$  Chern-Simons-matter theories without vortices”.

- Invited Seminar at Nordita Institute (Sept 5, 2017, Stockholm, Sweden). Title of talk: “Free energy and boundary conformal anomalies”.
- Invited Speaker at ‘7th Bangkok Workshop on High-Energy Theory’ (Jan 29 - Feb 2, 2018). Chulalongkorn University, Bangkok, Thailand. Title of talk: “Boundary conformal anomalies on  $AdS(b) \times S(a)$  spaces”.
- Invited Speaker at Workshop “Supersymmetric Quantum Field Theories in the Non-perturbative Regime”, The Galileo Galilei Institute for Theoretical Physics (GGI), Florence, Italy (April 2-May 5, 2018). Title of talk: “Correlation Functions in  $N=2$  Theories from Localization”.
- Invited Seminar at Workshop “Non-Perturbative Effects in Supersymmetric Field Theories”, at International Institute of Physics, Natal (Oct 15-Nov 2, 2018). Title of talk: “Toda unchained in  $N=2$  superconformal field theories”.
- Invited Seminar at Università di Roma Tor Vergata, Dipartimento di Fisica (6 May 2019). Title of talk “Hopping on singularities: A survey of quantum phase transitions in  $N=2$  supersymmetric theories”.
- Invited Seminar at KU Leuven, Institute for Theoretical Physics (9 May 2019). Title of talk “Properties of the partition function of supersymmetric QCD with massive matter”.
- Invited Speaker at “Workshop on Recent Developments in Strings and Gravity” in 19th Hellenic School on Elementary Particle Physics and Gravity, Corfu (9-14 Sept 2019). Title of talk: “No-Go Theorems for Compactifications to De Sitter Space”.
- Invited Seminar at Universidad Nacional de La Plata and Universidad de Buenos Aires (24 Jun 2020). Title of talk “Deformed Cauchy random matrix ensembles, large  $N$  phase transitions and Gross-Witten-Wadia model”.
- Invited Seminar at King’s College London and Centre for Mathematical Science, City, University of London (3 Dec 2020). Title of talk “Phases of unitary matrix models and lattice QCD in two dimensions”.
- Invited Colloquium, Institute of Cosmos Sciences, Universitat de Barcelona (11 Dec 2020). Title of Colloquium “Nobel 2020: Existence of black holes”.
- Invited Seminar at City College, City University of New York (CUNY) (5 Feb 2021). Title of talk “Matrix models, phase transitions and lattice QCD”.
- Invited Seminar at City College, City University of New York (CUNY) (5 Feb 2021). Title of talk “Matrix models, phase transitions and lattice QCD”.
- Invited Seminar “Correlation functions in finite temperature CFT and black hole singularities”, Physics department, University of Athens, Greece, 20 Apr 2021.
- Invited Seminar “Thermal correlators in CFT and black holes”, ITMP Moscow State University, Russia, May 12, 2021.
- Speaker at the Workshop “Gauge theories, supergravity and superstrings”, Centro de Ciencias de Benasque Pedro Pascual, Benasque (June 24, 2022). Title of talk “Massive supergravity, string cosmology and strange attractors”.
- Invited Seminar “Defects, RG flows and C-theorems in scalar field theory”, Crete Center for Theoretical Physics, University of Crete, Greece. 31 Oct 2023.

- Invited Speaker at the Workshop “Thermalisation in Conformal Field Theories” (10 Jul 2023 - 4 ago 2023) MITP - Mainz Institute for Theoretical Physics, Johannes Gutenberg University Mainz, Germany. Title of the talk “Thermal correlators from geodesics”.
- Invited Speaker at the Workshop “New Perspectives on Quantum Field Theory with Boundaries, Impurities, and Defects” (31 Jul -11 Aug 2023) NORDITA, Stockholm, Sweden. Title of the talk “Defects in Scalar Field Theories”.
- Invited Seminar “Born again”, Physics Department, University of Florence, Italy. 22 May 2024.
- Invited Seminar “On the new formulation of self-dual nonlinear Electrodynamics”, Department of Physics, University of Athens, Greece. 11 Nov 2024.
- Invited Speaker at the Workshop: Strings@ar 79 - Instituto de Fisica de La Plata, IFLP, La Plata Argentina. Title of the talk: “A fresh take on self-dual nonlinear Electrodynamics”. 11 Feb 2025.
- Invited Speaker at: Program on Fundamental Aspects of String Theory, (4-8 Aug 2025) ICTP-SAIFR, Sao Paolo, Brazil. Title of the talk “Higher derivative terms in ten-dimensional superstring theory”.
- Invited Speaker at the Workshop: “Exploring TTbar Deformations, Integrable Models and String Theory” (13-17 Oct 2025) Ningbo University, Ningbo, China. Title of the talk “Black holes in nonlinear electrodynamics”.

## Financed Projects

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- IP of the Project “Física Teórica de altas energías”. Programme: Groups de Recerca Consolidats de Catalunya. Grant 2014-SGR-104. Funding Agency: AGAUR, Generalitat de Catalunya (Prof. J. Russo, 1 Jan 2014 - 31 dec 2016). Departament ECM, Universitat de Barcelona.
- “Theory and phenomenology of fundamental interactions: particle physics and unification of forces”. Grant FPA2013-46570 , Programa estatal de fomento de la investigación científica y técnica de excelencia. Funding Agency Ministerio de Economía y Competitividad, Spain (IP: Prof. Domenec Espriu, 1 Jan 2014 - 31 dec 2016).
- Programme: “Excelencia MARIA DE MAEZTU”. Institute of Cosmos Sciences - MDM-2014-0369. Funding agency: Ministerio de Economía y Competitividad, Spain ( 1 Jan 2014 - 31 dec 2016).
- “Física de altas energías”. Programme: Groups de Recerca Consolidats de Catalunya. Grant 2009SGR502 (Prof. J. Solà, 1 Jan 2009 - 31 dec 2013). Departament ECM, Universitat de Barcelona.
- “Teoría y fenomenología de las interacciones fundamentales”. Grant FPA2010-20807-C02-01. Funding Agency Ministerio de Economía y Competitividad, Spain. Programme: PLAN NACIONAL DE I+D+i. (Prof. Domenec Espriu, 1 Jan 2011 - 31 dec 2013).

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- Consolider CPAN CSD2007-00042. Department ECM, Universitat de Barcelona.
- “Teoría de campos cuánticos y Teoría de supercuerdas”. Programme: Acciones integradas. Grant: ARGEN2007-012. Ministerio de Educación y Ciencia (IP: Jorge Russo, 2007 – 2009). Department ECM, Universitat de Barcelona.
- “Constituents, Fundamental Forces and Symmetries of the Universe”, European Commission RTN Programme under contract MRTN-CT-2004-005104 (Prof. D. Lüst, 1 Nov 2004 – 31 Oct 2008). Department ECM, Universitat de Barcelona.
- “Física d’altas energies”. Programme: Grups de Recerca Consolidats de Catalunya. Grant CIRIT GC 2005SGR-00564 (Prof. J. Solà, 1 Jan 2005 –31 Dec 2008). Department ECM, Universitat de Barcelona.
- “Teorías cuánticas efectivas y fundamentales”. Programme: Programas Nacionales del Plan Nacional de Investigación Científica. Grant: MCYT FPA 2004-04582-C02-01 (Prof. J. Gomis, 13 Dec 2004–12 dec 2007). Department ECM, Universitat de Barcelona.
- “Física d’altas energies”. Programme: Grups de Recerca Consolidats de Catalunya. Grant CIRIT GC 2001SGR-00065 (Prof. J. Gomis, 1 Apr 2003 – 31 Dec 2004). Department ECM.
- “Strings, Supergravity and Gauge fields”, European Commission RTN Programme under contract HPNR-CT-2000-00131 (Prof. A. Van Proeyen, 1 Apr 2003 – 12 Dec 2004). Department ECM.
- Department of Physics, University of Buenos Aires. “Gravitation, Cosmology and Quantum Physics”. Grant PICT99 03-05229 de la Agencia Nacional de Proyectos Científicos y Técnicos (ANPCyT) (Prof. E. Calzetta, Jan 2000 – Jun 2002).
- Theoretical Physics Group, University of Texas at Austin. “String theory and black holes”. Grant NSF PHY 9009850 (Prof. Steven Weinberg, Sep 1992 – Aug 1994).

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- [168] J. G. Russo and P. K. Townsend, “Black holes and causal nonlinear electrodynamics”, [arXiv:2601.07789 [hep-th]].
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