Lorenzo Di Pietro

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Personal Information

Date of birth	March 30th, 1987	Citizenship	Italian
Place of birth	Giulianova, Italy	Languages	Italian: native
			English: fluent

Employment

Sept. 2019– present **Research Associate**,
Dipartimento di Fisica, Università di Trieste

Sept. 2016– Aug. 2019 **Research Associate**,
Perimeter Institute for Theoretical Physics

Oct. 2013– Aug. 2016 **Research Associate**,
Department of Particle Physics & Astrophysics, Weizmann Institute of Science

Education

2010–2013 **Doctoral Studies**,
International School for Advanced Studies (SISSA), Trieste
Supervisor: Prof. M. Bertolini
Thesis: "Supersymmetry Breaking, Gauge Mediaton and Holography"
Grade: "cum laude" (graduated with distinction)

2005–2010 **Diploma in Physics**,
Scuola Normale Superiore of Pisa

2008–2010 **M.Sc. in Theoretical Physics**,
University of Pisa
Supervisor of Master Thesis: Prof. K. Konishi
Grade: 110/110 "cum laude" (graduated with distinction)

2005–2008 **B.Sc. in Physics**,
University of Pisa

Research Interests

★ Conformal Field Theory
★ Supersymmetric Quantum Field Theory
★ Renormalization Group
★ Large N Field Theories and Holography

Publications

Papers

[19] - 03/2020   L. Di Pietro, M. Serone
"*Looking through the QCD Conformal Window with Perturbation Theory*",
preprint, arXiv:2003.01742 [hep-th].

[18] - 05/2019   C. Closset, L. Di Pietro, H. Kim
"*'t Hooft anomalies and the holomorphy of supersymmetric partition functions*",
JHEP 1908 (2019) 035, arXiv:1905.05722 [hep-th].

[17] - 02/2019   L. Di Pietro, D. Gaiotto, E. Lauria and J. Wu
"*3d Abelian Gauge Theories at the Boundary*",
JHEP 1905 (2019) 091, arXiv:1902.09567 [hep-th].

[16] - 10/2018   D. Carmi, L. Di Pietro, and S. Komatsu,
"*A Study of Quantum Field Theories in AdS at Finite Coupling*",
JHEP 1901 (2019) 200, arXiv: 1810.04185 [hep-th].

[15] - 08/2017   L. Di Pietro, and E. Stamou,
"*Scaling dimensions in QED_3 from the ϵ-expansion*",
JHEP 1712 (2017) 054, arXiv: 1708.03740 [hep-th].

[14] - 08/2017   L. Di Pietro, and E. Stamou,
"*Operator mixing in ϵ-expansion: scheme and evanescent (in)dependence*",
Phys.Rev. D97 (2018) no.6, 065007, arXiv: 1708.03739 [hep-th].

[13] - 11/2016   L. Di Pietro, and M. Honda,
"*Cardy Formula for 4d SUSY Theories and Localization*",
JHEP 1704 (2017) 055, arXiv: 1611.00380 [hep-th].

[12] - 01/2016   V. Bashmakov, M. Bertolini, L. Di Pietro, and H. Raj,
"*Scalar Multiplet Recombination at Large N and Holography*",
JHEP 1605 (2016) 183, arXiv:1603.00387 [hep-th].

[11] - 08/2015   L. Di Pietro, Z. Komargodski, I. Shamir, and E. Stamou,
"*Quantum Electrodynamics in $d = 3$ from the ϵ-expansion*",
Phys.Rev.Lett. 116 (2016) no.13, 131601, arXiv:1508.06278 [hep-th].

[10] - 03/2015   B. Assel, D. Cassani, L. Di Pietro, Z. Komargodski, J. Lorenzen, and D. Martelli
"*The Casimir Energy in Curved Space and its Supersymmetric Counterpart*",
JHEP 07 (2015) 043, arXiv:1503.05537 [hep-th].

[9] - 07/2014   L. Di Pietro, N. Klinghoffer, I. Shamir
"*On Supersymmetry, Boundary Actions and Brane Charges*",
JHEP 16102 (2016) 163, arXiv:1502.05976 [hep-th].

[8] - 07/2014   L. Di Pietro, Z. Komargodski,
"*Cardy Formulae for SUSY theories in $d = 4$ and $d = 6$*",
JHEP 1412 (2014) 031, arXiv:1407.6061 [hep-th].

[7] - 02/2014   L. Di Pietro, M. Dine, and Z. Komargodski,
"*(Non-)Decoupled Supersymmetric Field Theories*",
JHEP 1404 (2014) 073, arXiv:1402.3385 [hep-th].

[6] - 10/2013 R. Argurio, M. Bertolini, L. Di Pietro, F. Porri, and D. Redigolo
"*Supercurrent Correlators at Weak and Strong Coupling*",
JHEP 1404 (2014) 123, arXiv:1310.6897 [hep-th].

[5] - 04/2013 M. Bertolini, L. Di Pietro, and F. Porri,
"*Holographic R-symmetric Flows and the τ_U Conjecture*",
JHEP 1308 (2013) 071, arXiv:1304.1481 [hep-th].

[4] - 08/2012 R. Argurio, M. Bertolini, L. Di Pietro, F. Porri, and D. Redigolo
"*Exploring Holographic General Gauge Mediation*",
JHEP 1210 (2012) 179, arXiv:1208.3615 [hep-th].

[3] - 05/2012 R. Argurio, M. Bertolini, L. Di Pietro, F. Porri, and D. Redigolo
"*Holographic Correlators for General Gauge Mediation*",
JHEP 1208 (2012) 086, arXiv:1205.4709 [hep-th].

[2] - 11/2011 M. Bertolini, L. Di Pietro, and F. Porri,
"*Dynamical Completions of Generalized O'Raifeartaigh Models*",
JHEP 1201 (2012) 158, arXiv:1111.2307 [hep-th].

[1] - 08/2011 L. Di Pietro, S. Giacomelli
"*Confining Vacua in SQCD, the Konishi anomaly, and the Dijkgraaf-Vafa Superpotential*",
JHEP 1202 (2012) 087, arXiv:1108.6049 [hep-th].

Proceedings

[1] - 2016 L. Di Pietro, Z. Komargodski, I. Shamir, and E. Stamou,
"*The ϵ-expansion for QED*",
Int.J.Mod.Phys. A31 (2016) no.28&29, 1645039.

Selected Invited Seminars

07/2019 Workshop "Bootstrap 2019", Perimeter Institute, Waterloo, Canada, "*Boundary conditions for free fields*".

07/2019 Workshop "Pre-Strings 2019", Leuven, Belgium, "*'t Hooft anomalies and the holomorphy of supersymmetric partition functions*".

04/2019 SPOCK meeting, University of Cincinnati, Cincinnati, USA, "*3d Abelian Gauge Theories at the Boundary*".

03/2019 Boston University, Boston, USA, "*Quantum Field Theory in AdS at finite coupling*".

11/2018 Simons Center, Stony Brook, USA, "*Quantum Field Theory in AdS at finite coupling*".

11/2018 Workshop "Developments in Quantum Field Theory and Condensed Matter Physics", Simons Center, Stony Brook, USA, "*3d Abelian Gauge Theories at the Boundary*".

04/2018 Caltech, Pasadena, USA, "*Perturbative approaches to QED in 3d*".

11/2017 Princeton University, Princeton, USA, "*Loops in AdS from Hamiltonian approach*".

11/2017 UC Davis, Davis, USA, "*Loops in AdS from Hamiltonian approach*".

07/2017 Workshop "Geometry of String and Gauge Theories", CERN, Geneva, Switzerland, "*Cardy Formula for SUSY Theories and Localization*".

12/2016	University of Michigan, Ann Arbor, USA, "*Cardy Formula for SUSY Theories and Localization*".
03/2016	Current Problems in Theoretical Physics, Vietri sul Mare, Italy, "*Universal Properties of Cylinder Partition Functions*".
12/2015	Neve-Shalom String Theory Joint Seminar, Neve-Shalom, Israel, "*Universal Properties of Cylinder Partition Functions*".
11/2015	Institute for Theoretical Physics, Utrecht, Netherlands, "*Universal Properties of Cylinder Partition Functions*".
09/2015	CERN, Geneva, Switzerland, "*QED in $d = 3$ from the ϵ-expansion*".
07/2015	International Congress on Mathematical Physics, Santiago, Chile, "*QED in $d = 3$ from the ϵ-expansion*".
04/2015	ULB/VUB/KUL/UMons joint seminar, Leuven, Belgium, "*Universal Properties of Supersymmetric Partition Functions*".
12/2014	LMU/MPP joint seminar, Munich, Germany, "*Universal Properties of Supersymmetric Partition Functions*".
10/2014	Crete Center for Theoretical Physics, Heraklion, Greece, "*Cardy Formulae in SUSY Theories*".
09/2014	Universiteit van Amsterdam, Amsterdam, Netherlands, "*Cardy Formulae in SUSY Theories*".
09/2014	2nd COST MP1210 Meeting and 20th European Workshop on String Theory *The String Theory Universe*, Mainz Institute for Theoretical Physics, Mainz, Germany, "*A Cardy-like formula in 4d*".
08/2014	International Symposium Ahrenshop *Recent Developments in String & Field Theory*, Berlin, Germany, "*Cardy Formulae in SUSY theories*".
06/2013	Seventh Crete Regional Meeting on String Theory, Kolymbari, Greece, "*Holographic R-symmetric flows and the τ_U conjecture*".

Organization of Conferences/Workshops

11/2014	*Bootstrap 2015*, Weizmann Institute of Science, Rehovot, Israel. Local organization.

Teaching

2020	PhD course "*Advanced QFT*" at Università di Trieste. The topic is low dimensional models that are solvable at large N.
2020	Undergraduate course "*Metodi Matematici della Fisica*" at Università di Trieste. This course provides an introduction to complex analysis, Fourier transform and Hilbert spaces.
2019	Perimeter Institute, Graduate Course "*AdS/CFT Correspondence*". This was a reading course following the textbook: "*Gauge/Gravity Duality: Foundations and Applications*", by Martin Ammon and Johanna Erdmenger (Cambrige University Press, 2015).

01/2017   GGI Lectures on the Theory of Fundamental Interactions, tutor for the course "*Advanced Topics in Quantum Field Theory*".

07/2014   Summer School on Particle Physics, Petnica Science Center, Petnica, Serbia, series of lectures "*Introduction to Quantum Field Theory*".