

CURRICULUM VITAE

Dati personali

Cognome: Pittau
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Data di nascita: 10 gennaio, 1965 in Torino, Italia
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Codice fiscale: PTTRRT65A10L219L
Conoscenze linguistiche: Italiano (lingua madre),
Inglese fluente,
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Educazione superiore

11/1989 - 09/1993: Dottorato in Fisica Teorica delle Alte Energie, U. di Torino
11/1988 - 11/1989: Corso di specializzazione in “*Fisica ed astrofisica sub-nucleare e nucleare*”, U. di Torino
28/10/1988: Laurea in Fisica, U. di Torino

Abilitazioni

Sono stato abilitato alle funzioni di professore universitario di prima fascia nella tornata 2012 dell'abilitazione scientifica nazionale.

Esperienze professionali

Posizioni accademiche

11/16 - oggi:	U. di Granada (E)	Professore Ordinario in Fisica Teorica (Catedrático de Universidad)
12/07 - 11/16:	U. di Granada (E)	Professore Associato in Fisica Teorica (Profesor Titular de Universidad)
4/99 - 11/07:	U. di Torino	Ricercatore universitario

Postdocs e contratti

01/10/1997 - 30/11/1999:	Fellow al CERN, Ginevra (CH)
11/09/1995 - 30/09/1997:	Postdoc al Paul Scherrer Institute, Villigen (CH)
29/06/1994 - 10/09/1995:	Postdoc al Fermilab, Batavia (USA)
26/01/1993 - 28/06/1994:	Postdoc al Lorentz Institute, U. di Leiden (NL)

Permanenze di lunga durata presso istituzioni scientifiche estere

01/10/2014 - 30/09/2015:	CERN, Ginevra (CH)	Scientific associate
01/02/2011 - 31/07/2011:	CERN, Ginevra (CH)	Scientific associate
21/06/2010 - 31/08/2010:	CERN, Ginevra (CH)	Professore invitato
01/08/2008 - 30/11/2008:	NCSR “Demokritos”, Atene (GR)	Professore invitato
25/06/2007 - 24/08/2007:	NCSR “Demokritos”, Atene (GR)	Professore invitato
10/07/2006 - 09/09/2006:	NCSR “Demokritos”, Atene (GR)	Professore invitato
01/11/2004 - 31/10/2005:	U. di Granada (E)	Professore invitato
01/10/2003 - 31/10/2004:	U. di Granada (E)	Anno sabbatico

Attività scientifica

Profilo scientifico

Leadership scientifica (Le referenze si riferiscono alla lista delle pubblicazioni a pagina 10)

La mia attività di ricerca scientifica è stata principalmente dedicata allo studio delle collisioni di particelle di alta energia, con l'obiettivo di produrre gli strumenti necessari per confrontare predizioni teoriche e dati sperimentali. I miei interessi comprendono un vasto spettro della Fisica delle Particelle. Dalle misure di grande precisione nelle collisioni elettrone-antielettrone [65, 68, 71, 72]

alla fenomenologia del Large Hadron Collider [42, 50, 51, 53, 64] e dei futuri acceleratori [3, 4, 5, 6]; da studi su possibili implicazioni di un settore esteso di Higgs [9, 26, 47] allo sviluppo di nuove tecniche per il calcolo delle correzioni Next-to-Leading Order e Next-to-Next-to-Leading Order necessarie per verificare con precisione il Modello Standard delle interazioni tra particelle elementari [1, 7, 10, 16, 18, 20, 21, 22, 23, 24, 31, 32, 38, 44].

Solide basi teoriche hanno spesso portato la mia attività scientifica alle frontiere della Fisica delle Particelle e della Teoria Quantistica dei Campi [2, 8, 18]. Sono autore di 125 lavori scientifici, con 14900 citazioni secondo *inSPIRE* (<http://inspirehep.net>), con un indice *h* pari a 51. Dal 2012 al 2017 sono stato co-investigatore principale dell' ERC grant *"Theoretical predictions and analyses of LHC Physics: advancing the precision frontier"* (ERC-2011-ADG-20110209: LHCtheory), e dal primo gennaio 2014 al 31 Dicembre 2017 responsabile spagnolo del Network Europeo "HiggsTools" (FP7-PEOPLE-2012-ITN 316704). Attualmente, sono Investigatore Principale del progetto *"Flavor and precise calculations in the Standard Model and beyond"* (PID2019-106087GB-C21-10.13039/501100011033), finanziato dalla Agenzia Statale di Ricerca spagnola.

Talks in conferenze e workshops internazionali (selezione)

- WorkStop/ThinkStart meeting: Paving the way to alternative NNLO strategies
GGI, Firenze (4-6.11/2019)
- Radcor 2019,
Avignone, France (8-13.09/2019)
- 11th FCC-ee workshop,
CERN Geneva, Switzerland (8-11.01/2019)
- HP2 2018,
Freiburg, Germany (1.10-3.10/2018)
- Mini workshop: Precision EW and QCD calculations for the FCC studies: methods and techniques,
CERN Geneva, Switzerland (12-13.01/2018)
- Regularization Scheme Workshop 2016,
Zürich, Switzerland (13.09-16.09/2016)
- HP2.5@GGI 2014,
Firenze (3.09-05.09/2014)
- Radcor 2013,
Durham, UK (22.09-27.09/2013)
- Amplitudes 2013,
Munich, Germany (28.04-03.05/2013)
- HP2: High Precision for Hard Processes,
Munich, Germany (4-7.09/2012)

- LCWS 2011: International Workshop on Future Linear Colliders, Granada, Spain (26-30.09/2011).
- 7th Les Houches Workshop: Physics at TeV Colliders, Les Houches, France (30.05-17.06/2011).
- IWLC2010 International Workshop on Linear Colliders 2010, Geneva, Switzerland (18-22/10/2010)
- School and Workshops on the Standard Model and Beyond, Corfù, Greece (29.08-05.09/2010)
- TOOLS 2010: Tools for SUSY and the New Physics, Sharpening our Tools, Winchester, United Kingdom (26.06-02.07/2010).
- Perturbative higher-order effects at work at LHC-HO10 CERN Geneva, Switzerland (21.06-09.07/2010).
- IFAE 2010, Rome, Italy (07-09.04/2010).
- MC4LHC readiness, CERN Geneva, Switzerland (29.03-01.04/2010).
- 6th Les Houches Workshop: Physics at TeV Colliders, Les Houches, France (08-26.06/2009).
- MC4LHC: from Parton Showers to NNLO, CERN Geneva, Switzerland (04-08.05/2009).
- DIS 2009, XVII International Workshop on Deep-Inelastic Scattering and Related Subjects, Madrid, Spain (26-30.04/2009).
- Meeting of the "HEPTOOLS" network, Athens, Greece (26-27.11/2007).
- RADCOR 2007, Florence, Italy (01-05.10/2007).
- LoopFest VI, Fermilab, Batavia, IL, EE.UU. (16-18.04/2007).
- Workshop HP2 , High Precision for Hard Processes at the LHC, Zurich, Switzerland (06-09.09/2006).
- High Energy Physics (HEP-EPS 2005), Lisbon, Portugal (21-27.07/2005).
- International Conference on Linear Colliders (LCWS 04), Paris, France (19-24.04/2004).
- 31st International Conference On High Energy Physics (ICHEP 2002), Amsterdam, Holland (24-31.07/2002).
- 13th Italian Workshop On LEP Physics (LEP 2001), Rome, Italy (18-20.04/2001).
- 15th International Workshop on High-Energy Physics and Quantum Field Theory (QFTHEP 2000), Tver, Russia (14-20.09/2000).
- International Europhysics Conference on High-Energy Physics (HEP 97), Jerusalem, Israel (19.08-26.08/1997).

- 28th International Conference on High-energy Physics (ICHEP 96), Warsaw, Poland (25.07-31.07/1996).
- Zeuthen Workshop on Elementary-Particle Theory: Physics at LEP200 and beyond, Teupitz, Germany (10.04-15.04/1994).

Attività relazionate alla ricerca ed alla gestione

Responsabilità di gestione

- 21/10/2004 - 04/07/2006:** Coordinatore del *Master in Interazioni Fondamentali*, U. di Torino.
- 11/10/2001 - 16/12/2005:** Membro della Facoltà di Scienze, U. di Torino.
- 07/09/1999 - 20/09/2000:** Chairman del Workshop CERN “*Precision Calculations for LEP-2 Physics*”, CERN, Geneva (CH).

Attività di supervisione

Ho diretto il lavoro di diversi postdocs, dottorandi, studenti di master e studenti di laurea breve:

Postdocs

Nome	Anni	Posizione attuale
Maria Vittoria Garzelli	2008-2011	Università di Amburgo (D)
Michele Treccani	2007-2010	Analista quantitativo al List
Petros Draggiotis	2007-2009	Settore educazione
Giovanni Ossola	2006-2008	Professore al CUNY NY (USA)

Studenti di dottorato

Nome	Anno	Posizione attuale
Davide Melini	2018	Technion, Israel Institute of Technology
Alice Maria Donati	2015	Settore educazione
Benjamin John Page	2015	Postdoc all' IPhT, Saclay (F)
Yiannis Malamos	2012	Settore educazione

Studenti di master e laurea breve

Nome	Anno	
Emilio Pastor Gómez	2020	U. di Granada (E)
Juan Tomás Morales	2020	U. di Granada (E)
Benjamin John Page	2013	U. di Granada (E)
Francesco Ravotti	2007	U. di Torino
Alessandro Goitre	2006	U. di Torino
Elena Beretta	2006	U. di Torino

Attività editoriali

1 - Editore di:

- Proceedings of the “*12th Hellenic School and Workshops on Elementary Particle Physics and Gravity*”, Corfu, Greece, September 8-27, 2012, PoS CORFU2012 (2012).
- Proceedings of the Les Houches, France, Mar 2012. 215 pp. arXiv:1203.6803 [hep-ph]. “*7th Les Houches Workshop: Physics at TeV Colliders*”, SM and NLO Multileg Working Group. Les Houches, France, Mar 2012. 215 pp. arXiv:1203.6803 [hep-ph].
- Proceedings of the “*6th Les Houches Workshop: Physics at TeV Colliders*”, SM and NLO Multileg Working Group. Les Houches, France, Mar 2010. 169pp. arXiv:1003.1241 [hep-ph].
- Proceedings of the “*Final meeting of the European Union Network*”. Montpellier, France, September 26-27, 2004. Acta Phys. Pol. B35 (2004) 2527-2811.
- Proceedings of the Monte Carlo Workshop “*Reports of the working groups on precision calculation for LEP-2 Physics*”. Geneva, Switzerland, December 2000, CERN-2000-09 (00/09,rec.Dec.) 378 p.

2 - Referee di:

- Journal of High Energy Physics
- Journal of Physics G
- Computer Physics Communications
- Physics Letters B

Organizzazione di Conferenze, Workshops e Scuole

- Organizzatore del “*Summer School and Workshop on the Standard Model and Beyond*”. 31/08-11/09/2013, Corfù (GR).
- Organizzatore del “*Summer School and Workshop on the Standard Model and Beyond*”. 8-17/09/2012, Corfù (GR).
- Organizzatore del “*International Workshop on Future Linear Colliders-LCWS11*”. 26-30/09/2011, Granada, (E).
- Convener del SM and NLO Multileg Working Group del “*7th Les Houches Workshop: Physics at TeV Colliders*”. 30/05/2011 - 17/06/2011, Les Houches (F).

- Organizzatore del second meeting of the Spanish
“*Network for studying Particle Physics at the LHC CERN experiments*”. 29-30/11/2010, U.
di Valencia (E).
- Organizzatore del “*Final meeting of the HEPTOOLS Network*”.
25-26/11/2010, U. di Granada (E).
- Organizzatore del first meeting of the Spanish
“*Network for studying Particle Physics at the LHC CERN experiments*”. 28-30/10/2009, U.
di Granada (E).
- Convener del SM and NLO Multileg Working Group del
“*6th Les Houches Workshop: Physics at TeV Colliders*”.
8-26/06/2009, Les Houches (F).
- Organizzatore del “*Final meeting of the European Union Network*”.
26-27/09/2004, U. di Montpellier (F).
- Organizzatore del “*Third graduate school in Physics at Colliders*”.
07/01/2008 - 11/01/2008, U. di Torino.
- Organizzatore del “*Second graduate school in Physics at Colliders*”.
30/06/2003 - 05/07/2003, U. di Torino.
- Organizzatore del “*First graduate school in Physics at Colliders*”.
02/10/2001 - 06/10/2001, U. di Torino.

Direzione di progetti

Titolo del progetto	Finanziato da	Durata	Ruolo
“Flavor and precise calculations in the Standard Model and beyond” (PID2019-106087GB-C21)	Spanish Ministry Total Budget: 142,780 €	06/2020- 05/2023	PI
“Precise Calculations for new physics” (FPA2013-47836)	Spanish Ministry Total Budget: 169,400 €	01/2014- 12/2017	Co-PI
“LHCtheory” (ERC-2011-ADG-20110209)	European Commission Total Budget: 2,049,600 €	04/2012- 03/2017	Co-PI
“HiggTools” (FP7-PEOPLE-2012-ITN 316704)	European Commission Local Budget: 239,874 €	01/2014- 12/2017	Spanish Node Coordinator
“LHC Phenomenology at 1-Loop” (FPA2011-22398)	Spanish Ministry Total Budget: 62,920 €	01/2012- 12/2014	PI
“Full automatic 1-Loop computations numerically” (FPA2008-02984)	Spanish Ministry Total Budget: 57,475 €	01/2009- 12/2011	PI
“Aspects of LHC Physics at the LHC” (ACI2009-8208;1045)	Spanish Ministry and INFN	12/2009- 01/2011	PI
“Gauge Boson production and precision studies at LHC” (SAAB 2002-0207)	Spanish Ministry	10/2003- 09/2004	PI
“Network for studying Particle Physics at the LHC CERN experiments” (FPA2011-14114-E)	Spanish Ministry	12/2011- 12/2013	Co-PI
“Network for studying Particle Physics at the LHC CERN experiments” (FPA2008-01699-E)	Spanish Ministry	01/2008- 12/2010	Co-PI

Partecipazione in progetti (selezione)

Titolo del progetto	Finanziato da	Durata	Ruolo
“Flavor Physics for BSM” (A-FQM-467-UGR18)	Andalusian Government	01/01/2020- 31/12/2022	Member
“BSM models at different scales” (P18-FR-4314)	Andalusian Government	01/01/2020- 31/12/2022	Member
“Precise calculations in Particle Physics” (P10-FQM 6552)	Andalusian Government	15/03/2011- 30/04/2016	Member
“New Physics searches at Particle Colliders and Astroparticle” (P07-FQM 03048)	Andalusian Government	18/01/2008- 17/01/2012	Member
“Theoretical models, precision calculations and simulations for the next generation of experiments in Particle Physics” (MIUR 2006020509_004)	Italian Ministry	01/02/2007- 31/01/2009	Member
“HEPTOOLS, Tools and Precision Calculations for Physics Discoveries at Colliders” (MRTN-CT-2006-0355056)	European Commission	01/12/2006- 30/11/2010	Member
“Phenomenology of the Standard Model of the electroweak and strong interactions and its extensions at high energy/luminosity Colliders” (FPA 2006-05294)	Spanish Ministry	10/2006- 04/2008	Member
“String inspired effective gravitation theories: cosmological implications and phenomenological predictions” (FIS2004-06823)	Spanish Ministry	12/2004- 12/2007	Member
“New Physics and precision Physics at accelerators: frontier problems in the theory of fundamental interactions” (MIUR 2004021808_009)	Italian Ministry	04/2004- 03/2006	Member

Partecipazione in progetti (cont)

Titolo del progetto	Finanziato da	Durata	Ruolo
“Theoretical Physics: Elementary Particles” (FQM 101)	Andalusian Government	01/2004- 12/2006	Member
“Phenomenology of the Standard Model and its extensions at Particle Colliders” (FPA2003-09298-C02-01)	Spanish Ministry	12/2003- 11/2006	Member
“Elementary Particle Physics: theory and experiment” (P05-FQM 437)	Andalusian Government	02/2006- 09/2009	Member
“Theory and phenomenology of elementary Particles” (MIUR 20011023713_06)	Italian Ministry	02/2001- 01/2003	Member
“Particle Physics phenomenology at high energy Colliders” (HPRN-CT-2000-00149)	European Commission	08/2000- 01/2005	Member
“Electroweak and strong phenomenology at Colliders” (TO23)	INFN	01/2000- 12/2007	Member
“Phenomenology of the Standard Model and alternatives for present and future high energy Colliders” (ERBCHRXCT920004)	European Commission	09/1993- 06/1996	Member

Lista degli articoli pubblicati in riviste peer reviewed

- [1] W. J. Torres Bobadilla *et al.* “May the four be with you: Novel IR-subtraction methods to tackle NNLO calculations,” *Eur. Phys. J. C* **81** (2021) no.3, 250
- [2] **R. Pittau**, “Matching high-energy electroweak fermion loops onto the Fermi theory without higher dimensional operators,” *Nucl. Phys. B* **950** (2020), 114835
- [3] A. Abada *et al.* [FCC], “FCC-ee: The Lepton Collider: Future Circular Collider Conceptual Design Report Volume 2,” *Eur. Phys. J. ST* **228** (2019) no.2, 261-623
- [4] A. Abada *et al.* [FCC], “FCC-hh: The Hadron Collider: Future Circular Collider Conceptual Design Report Volume 3,” *Eur. Phys. J. ST* **228** (2019) no.4, 755-1107

- [5] A. Abada *et al.* [FCC], “HE-LHC: The High-Energy Large Hadron Collider: Future Circular Collider Conceptual Design Report Volume 4,” *Eur. Phys. J. ST* **228** (2019) no.5, 1109-1382
- [6] A. Abada *et al.* [FCC], “FCC Physics Opportunities: Future Circular Collider Conceptual Design Report Volume 1,” *Eur. Phys. J. C* **79** (2019) no.6, 474
- [7] B. Page and **R. Pittau**, “NNLO final-state quark-pair corrections in four dimensions,” *Eur. Phys. J. C* **79** (2019) no.4, 361
- [8] C. Gnendiger *et al.*, “To d , or not to d : recent developments and comparisons of regularization schemes,” *Eur. Phys. J. C* **77** (2017) no.7, 471
- [9] E. Gabrielli, B. Mele, F. Piccinini and **R. Pittau**, “Asking for an extra photon in Higgs production at the LHC and beyond,” *JHEP* **1607** (2016) 003
- [10] B. Page and **R. Pittau**, “Two-loop off-shell QCD amplitudes in FDR,” *JHEP* **1511** (2015) 183
- [11] R. Pittau, “Integration-by-parts identities in FDR,” *Fortsch. Phys.* **63** (2015) 601 doi:10.1002/prop.201500040
- [12] N. Brambilla *et al.*, “QCD and Strongly Coupled Gauge Theories: Challenges and Perspectives,” *Eur. Phys. J. C* **74** (2014) no.10, 2981
- [13] A. M. Donati and **R. Pittau**, “FDR, an easier way to NNLO calculations: a two-loop case study,” *Eur. Phys. J. C* **74** (2014) 2864
- [14] S. Alioli, **R. Pittau** *et al.*, “Update of the Binoth Les Houches Accord for a standard interface between Monte Carlo tools and one-loop programs,” *Comput.Phys.Commun.* **185** (2014) 560-571
- [15] B. Page and **R. Pittau**, “R2 vertices for the effective ggH theory,” *JHEP* **1309** (2013) 078
- [16] A. M. Donati and **R. Pittau**, “Gauge invariance at work in FDR: $H \rightarrow \gamma\gamma$,” *JHEP* **1304** (2013) 167
- [17] G. Bevilacqua, M. Czakon, M. V. Garzelli, A. van Hameren, A. Kardos, C. G. Papadopoulos, **R. Pittau** and M. Worek, “Helac-nlo,” *Comput. Phys. Commun.* **184** (2013) 986
- [18] **R. Pittau**, “A four-dimensional approach to quantum field theories,” *JHEP* **1211** (2012) 151
- [19] **R. Pittau**, “Primary Feynman rules to calculate the epsilon-dimensional integrand of any 1-loop amplitude,” *JHEP* **1202** (2012) 029
- [20] R. Frederix, S. Frixione, V. Hirschi, F. Maltoni, **R. Pittau** and P. Torrielli, “aMC@NLO predictions for Wjj production at the Tevatron,” *JHEP* **1202** (2012) 048
- [21] R. Frederix, S. Frixione, V. Hirschi, F. Maltoni, **R. Pittau** and P. Torrielli, “Four-lepton production at hadron Colliders: aMC@NLO predictions with theoretical uncertainties,” *JHEP* **1202** (2012) 099

- [22] R. Frederix, S. Frixione, V. Hirschi, F. Maltoni, **R. Pittau** and P. Torrielli, “W and Z/γ^* boson production in association with a bottom-antibottom pair,” JHEP **1109** (2011) 061
- [23] R. Frederix, S. Frixione, V. Hirschi, F. Maltoni, **R. Pittau** and P. Torrielli, “Scalar and pseudoscalar Higgs production in association with a top-antitop pair,” Phys. Lett. B **701** (2011) 427
- [24] V. Hirschi, R. Frederix, S. Frixione, M. V. Garzelli, F. Maltoni and **R. Pittau**, “Automation of one-loop QCD corrections,” JHEP **1105** (2011) 044
- [25] M. V. Garzelli, I. Malamos and **R. Pittau**, “Feynman rules for the rational part of the Electroweak 1-loop amplitudes in the R_ξ gauge and in the Unitary gauge,” JHEP **1101** (2011) 029
- [26] M. Moretti, S. Moretti, F. Piccinini, **R. Pittau** and J. Rathsmann, “Production of Light Higgs Pairs in 2-Higgs Doublet Models via the Higgs-strahlung Process at the LHC,” JHEP **1011** (2010) 097
- [27] **R. Pittau**, “Testing and improving the numerical accuracy of the NLO predictions,” Comput. Phys. Commun. **181** (2010) 1941
- [28] T. Binoth *et al.*, “A proposal for a standard interface between Monte Carlo tools and one-loop programs,” Comput. Phys. Commun. **181** (2010) 1612
- [29] F. del Aguila, J. A. Aguilar-Saavedra, M. Moretti, F. Piccinini, **R. Pittau** and M. Treccani, “Combined analysis of $Z' \rightarrow t \bar{t}$ and $Z' \rightarrow t \bar{t} j$ production for vector resonance searches at LHC,” Phys. Lett. B **685** (2010) 302
- [30] M. V. Garzelli, I. Malamos and **R. Pittau**, “Feynman rules for the rational part of the Electroweak 1-loop amplitudes,” JHEP **1001** (2010) 040
- [31] G. Bevilacqua, M. Czakon, C. G. Papadopoulos, **R. Pittau** and M. Worek, “Assault on the NLO Wishlist: $pp \rightarrow t\bar{t} b\bar{b}$,” JHEP **0909** (2009) 109 [[116](#)].
- [32] A. van Hameren, C. G. Papadopoulos and **R. Pittau**, “Automated one-loop calculations: a proof of concept,” JHEP **0909** (2009) 106
- [33] P. Draggiotis, M. V. Garzelli, C. G. Papadopoulos and **R. Pittau**, “Feynman Rules for the Rational Part of the QCD 1-loop amplitudes,” JHEP **0904** (2009) 072
- [34] T. Binoth, G. Ossola, C. G. Papadopoulos and **R. Pittau**, “NLO QCD corrections to tri-boson production,” JHEP **0806** (2008) 082
- [35] P. Mastrolia, G. Ossola, C. G. Papadopoulos and **R. Pittau**, “Optimizing the Reduction of One-Loop Amplitudes,” JHEP **0806** (2008) 030
- [36] G. Ossola, C. G. Papadopoulos and **R. Pittau**, “On the Rational Terms of the one-loop amplitudes,” JHEP **0805** (2008) 004

- [37] F. del Aguila *et al.*, “Collider aspects of flavour physics at high Q ,” *Eur. Phys. J. C* **57** (2008) 183
- [38] G. Ossola, C. G. Papadopoulos and **R. Pittau**, “CutTools: a program implementing the OPP reduction method to compute JHEP **0803** (2008) 042
- [39] M. Moretti, S. Moretti, F. Piccinini, **R. Pittau** and J. Rathsmann, “Vector-Boson Production of Light Higgs Pairs in 2-Higgs Doublet Models,” *JHEP* **0712** (2007) 075 [[8](#)].
- [40] G. Ossola, C. G. Papadopoulos and **R. Pittau**, “Numerical Evaluation of Six-Photon Amplitudes,” *JHEP* **0707** (2007) 085
- [41] F. del Aguila, J. A. Aguilar-Saavedra and **R. Pittau**, “Heavy neutrino signals at large hadron Colliders,” *JHEP* **0710** (2007) 047
- [42] E. Gabrielli, F. Maltoni, B. Mele, M. Moretti, F. Piccinini and **R. Pittau**, “Higgs boson production in association with a photon in vector boson fusion at the LHC,” *Nucl. Phys. B* **781** (2007) 64
- [43] J. Alwall *et al.*, “A standard format for Les Houches event files,” *Comput. Phys. Commun.* **176** (2007) 300
- [44] G. Ossola, C. G. Papadopoulos and **R. Pittau**, “Reducing full one-loop amplitudes to scalar integrals at the integrand level,” *Nucl. Phys. B* **763** (2007) 147 [[233](#)].
- [45] V. Del Duca *et al.*, “Monte Carlo studies of the jet activity in Higgs + 2jet events,” *JHEP* **0610** (2006) 016
- [46] F. del Aguila, L. Ametller and R. Pittau, “NLO forward-backward charge asymmetries in p (anti-) $p \rightarrow l^- l^+ \text{ jet}$ production at large hadron Colliders,” *Phys. Lett. B* **628** (2005) 40
- [47] M. Moretti, S. Moretti, F. Piccinini, **R. Pittau** and A. D. Polosa, “Higgs boson self-couplings at the LHC as a probe of extended Higgs sectors,” *JHEP* **0502** (2005) 024
- [48] F. del Aguila and **R. Pittau**, “Recursive numerical calculus of one-loop tensor integrals,” *JHEP* **0407** (2004) 017 [[91](#)].
- [49] W. Beenakker, A. P. Chapovsky, A. Kanaki, C. G. Papadopoulos and **R. Pittau**, “Towards an effective-Lagrangian approach to fermion-loop corrections,” *Nucl. Phys. B* **667** (2003) 359
- [50] M. L. Mangano, M. Moretti, F. Piccinini, **R. Pittau** and A. D. Polosa, “ b anti- b final states in Higgs production via weak boson fusion at the LHC,” *Phys. Lett. B* **556** (2003) 50
- [51] M. L. Mangano, M. Moretti, F. Piccinini, **R. Pittau** and A. D. Polosa, “ALPGEN, a generator for hard multiparton processes in hadronic collisions,” *JHEP* **0307** (2003) 001
- [52] F. Gianotti *et al.*, “Physics potential and experimental challenges of the LHC luminosity upgrade,” *Eur. Phys. J. C* **39** (2005) 293

- [53] M. L. Mangano, M. Moretti and **R. Pittau**, “Multijet matrix elements and shower evolution in hadronic collisions: $Wb\bar{b} + n$ jets as a case study,” Nucl. Phys. B **632** (2002) 343
- [54] F. A. Berends, C. G. Papadopoulos and **R. Pittau**, “NEXTCALIBUR: A Four fermion generator for electron positron collisions,” Comput. Phys. Commun. **136** (2001) 148
- [55] A. Abada, J. Matias and **R. Pittau**, “Low-energy photon neutrino inelastic processes beyond the standard model,” Phys. Lett. B **450** (1999) 173 [4].
- [56] A. Abada, J. Matias and **R. Pittau**, “Direct computation of inelastic photon neutrino processes in the standard model,” Nucl. Phys. B **543** (1999) 255
- [57] F. Caravaglios, M. L. Mangano, M. Moretti and **R. Pittau**, “A new approach to multi-jet calculations in hadron collisions,” Nucl. Phys. B **539** (1999) 215
- [58] A. Abada, J. Matias and **R. Pittau**, “Inelastic photon neutrino interactions using an effective Lagrangian,” Phys. Rev. D **59** (1999) 013008
- [59] **R. Pittau**, “A simple method for multi-leg loop calculations. II: A general algorithm,” Comput. Phys. Commun. **111** (1998) 48
- [60] E. Maina, **R. Pittau** and M. Pizzio, “QCD corrections to $e^+ e^- \rightarrow u \text{ anti-}d \text{ s anti-}c$ at LEP 2 and the Next Linear Collider: CC11 at $O(\alpha(s))$,” Phys. Lett. B **429** (1998) 354
- [61] F. A. Berends, C. G. Papadopoulos and **R. Pittau**, “On the determination of $M(W)$ and TGCs in W -pair production using the best measured kinematical variables,” Phys. Lett. B **417** (1998) 385
- [62] E. Maina, **R. Pittau** and M. Pizzio, “QCD corrections to $e^+ e^- \rightarrow \mu^- \text{ anti-}\nu/\mu^+ u \text{ anti-}d$ at LEP2 and the Next Linear Collider: CC10 at $O(\alpha(s))$,” Phys. Lett. B **393** (1997) 445
- [63] **R. Pittau**, “A simple method for multi-leg loop calculations,” Comput. Phys. Commun. **104** (1997) 23
- [64] **R. Pittau**, “Final state QCD corrections to off-shell single top production in hadron collisions,” Phys. Lett. B **386** (1996) 397
- [65] F. A. Berends, **R. Pittau** and R. Kleiss, “Excalibur: A Monte Carlo Program To Evaluate All Four Fermion Processes At Lep-200 And Beyond,” Comput. Phys. Commun. **85** (1995) 437
- [66] **R. Pittau**, “Four quark processes at LEP 200,” Phys. Lett. B **335** (1994) 490
- [67] F. A. Berends, **R. Pittau** and R. Kleiss, “Four fermion production in $e^+ e^-$ annihilation,” Nucl. Phys. Proc. Suppl. **37B** (1994) 163
- [68] F. A. Berends, **R. Pittau** and R. Kleiss, “All electroweak four fermion processes in electron - positron collisions,” Nucl. Phys. B **424** (1994) 308 [154].
- [69] F. A. Berends, **R. Pittau** and R. Kleiss, “Initial State QED Corrections To Four Fermion Production In $E^+ E^-$ Collisions At Lep-200 And Beyond,” Nucl. Phys. B **426** (1994) 344

- [70] R. Kleiss and **R. Pittau**, “Weight optimization in multichannel Monte Carlo,” *Comput. Phys. Commun.* **83** (1994) 141
- [71] G. Montagna, F. Piccinini, O. Nicrosini, G. Passarino and **R. Pittau**, “Topaz0: A Program For Computing Observables And For Fitting Cross-Sections And Forward - Backward Asymmetries Around The Z0 Peak,” *Comput. Phys. Commun.* **76** (1993) 328.
- [72] G. Montagna, F. Piccinini, O. Nicrosini, G. Passarino and **R. Pittau**, “On a semianalytical and realistic approach to e^+e^- annihilation into fermion pairs and to Bhabha scattering within the minimal Standard Model at LEP energies,” *Nucl. Phys. B* **401** (1993) 3.
- [73] F. Piccinini and **R. Pittau**, “The Interplay Between Electroweak And Strong Radiative Corrections In $E^+ E^- \rightarrow B \text{ Anti-B}$,” *Phys. Lett. B* **293** (1992) 237.
- [74] M. Cacciari, G. Montagna, O. Nicrosini, G. Passarino and **R. Pittau**, “A Critical Analysis Of Radiative Corrections To $E^+ E^- \rightarrow \text{Mu}^+ \text{Mu}^-$,” *Phys. Lett. B* **286** (1992) 387.
- [75] G. Passarino and **R. Pittau**, “M (w) WITHOUT DELTA r,” *Phys. Lett. B* **228** (1989) 89.
- [76] G. Passarino and **R. Pittau**, “POLARIZED BEAMS AND FINAL STATE HEAVY FERMION POLARIZATION,” *Phys. Lett. B* **215** (1988) 154.

Attività didattica

Ho insegnato nei seguenti corsi di PhD, Master e Laurea breve

Corsi di PhD

Corso	a.a.	Ore	Luogo
Fisica BSM, il bosone di Higgs	2013/2014	20	U. di Granada (E)
Fisica BSM, il bosone di Higgs	2012/2013	20	U. di Granada (E)
Fisica BSM, il bosone di Higgs	2011/2012	20	U. di Granada (E)
Fisica BSM, il bosone di Higgs	2010/2011	20	U. di Granada (E)
Fisica delle particelle all' LHC	2009/2010	30	U. di Granada (E)
Fisica BSM, il bosone di Higgs	2009/2010	20	U. di Granada (E)
Fisica BSM, il bosone di Higgs	2008/2009	20	U. di Granada (E)
Fisica delle particelle all' LHC	2008/2009	30	U. di Granada (E)
Fisica delle particelle all' LHC	2007/2008	30	U. di Granada (E)
Fisica delle particelle all' LHC	2006/2007	30	U. di Granada (E)
Fisica delle particelle all' LHC	2005/2006	30	U. di Granada (E)
Il Modello Standard	2002/2003	25	U. di Torino
Il Modello Standard	2001/2002	25	U. di Torino

Corsi di PhD all'estero

Corso	Data	Luogo
“QCD”	31.08-12.09/2013	Corfu (GR)
“New Techniques to compute multileg 1-loop amplitudes”	22-27/06/2009	MPI, München (D)
“Automatizing 1-loop multi-leg calculations for LHC(and ILC) Physics”	04-08/05/2009	CERN (CH)
“Reduction at NLO”	29-30/05/2008	U. di Nijmegen (NL)

Corsi di Master

Corso	a.a	Ore	Luogo
Fisica delle particelle	2013/2014	60	U. di Granada (E)
Fisica delle particelle	2012/2013	60	U. di Granada (E)
Fisica delle particelle	2011/2012	40	U. di Granada (E)
Esercitazioni di Fisica delle particelle	2008/2009	20	U. di Granada (E)
Esercitazioni di teoria dei campi	2006/2007	25	U. di Torino
Esercitazioni di teoria dei campi	2005/2006	25	U. di Torino
Esercitazioni di teoria dei campi	2002/2003	13	U. di Torino

Corsi di Laurea breve

Corso	a.a.	Ore	Luogo
Teoria dei campi e particelle	2020/2021	60	U. di Granada (E)
Esercitazioni di meccanica per matematici	2020/2021	15	U. di Granada (E)
Esercitazioni di Fisica II per chimici	2020/2021	15	U. di Granada (E)
Meccanica per matematici	2019/2020	45	U. di Granada (E)
Teoria dei campi e particelle	2019/2020	60	U. di Granada (E)
Meccanica per matematici	2018/2019	45	U. di Granada (E)
Teoria dei campi e particelle	2018/2019	60	U. di Granada (E)
Fisica per biologia	2017/2018	50	U. di Granada (E)
Meccanica per matematici	2017/2018	60	U. di Granada (E)
Fisica per biologia	2016/2017	50	U. di Granada (E)
Meccanica per matematici	2016/2017	60	U. di Granada (E)
Meccanica per matematici	2015/2016	60	U. di Granada (E)
Fisica per biologia	2015/2016	50	U. di Granada (E)
Teoria dei campi e particelle	2013/2014	40	U. di Granada (E)
Fisica per biologia	2011/2012	50	U. di Granada (E)
Fisica per biologia	2009/2010	65	U. di Granada (E)
Fisica per biologia	2008/2009	55	U. di Granada (E)
Fisica per biologia	2007/2008	65	U. di Granada (E)
Esercitazioni di Meccanica Quantistica	2007/2008	25	U. di Torino
Esercitazioni di Meccanica Quantistica	2006/2007	25	U. di Torino
Esercitazioni di Meccanica Quantistica	2005/2006	25	U. di Torino
Meccanica analitica e statistica	2005/2006	60	U. di Torino
Pratiche di Fisica per biologia	2004/2005	100	U. di Granada (E)
Esercitazioni di Metodi matematici della Fisica III	2004/2005	40	U. di Granada (E)
Teoria dei campi	2004/2005	25	U. di Granada (E)
Esercitazioni di Meccanica Quantistica I	2002/2003	25	U. di Torino
Esercitazioni di Meccanica Quantistica I	2001/2002	20	U. di Torino
Esercitazioni di Istituzioni di Fisica teorica	2000/2001	65	U. di Torino
Esercitazioni di Fisica I	1999/2000	75	U. di Torino