

CONTACT  
INFORMATION

Address: Centre de Physique des Particules de Marseille  
163, avenue de Luminy Case 902  
13288 Marseille cedex 09  
Telephone: +33 4 91 82 76 21  
e-mail: lorenzo@in2p3.fr

## PERSONAL DATA

Date of Birth: March 14th 1973  
Place of Birth: Umbertide (PG), Italy  
Nationality: Italian

## EDUCATION

**Aix-Marseille Université**, Marseille, France

- Habilitation à Diriger la Recherche (HDR), Ecole Doctorale Physique et Sciences de la Matière (ED 352), December 2017
  - Thesis Title: *Top, Higgs, SUSY and all those jets: analysing fully hadronic events at the LHC*

**Boston University**, Boston, MA USA

- Ph.D, Graduate School of Arts and Science, January 2006
  - Thesis Title: *Search for Techniparticle at  $D\bar{0}$*
  - Advisor: Meenashi NARAIN

**Università degli Studi di Perugia**, Perugia (PG) Italy

Laurea, Physics Department of the University of Perugia, May 1999

- Thesis Title: *Calculation of the Electric Dipole Two-Time Correlation Functions for the Hydrogen Atom in Bohm Theory and Conventional Quantum Mechanics*
- Advisor: Yogendra SRIVASTAVA

RESEARCH  
APPOINTMENTS

**CNRS Research Position (CRCN)** October 2008-present  
Member of the ATLAS Group at the Centre de Physique des Particules de Marseille UMR 6550, CNRS, Institut national de physique nucléaire et de physique des particules (IN2P3), Aix-Marseille Université

---

Search for new physics beyond the Standard Model in multi- $b$ -jets events collected in Run 2 with the ATLAS detector.

Calibration of the ATLAS Run 2 online  $b$ -tagging algorithms using  $t\bar{t}$  dilepton PDF method.

Responsible for the  $b$ -jet trigger slice online monitoring for Run 2.

Phenomenological characterization of natural stop in R-parity violating SUSY models and experimental analysis aimed at the search for these class of models using Run 2 data collected at the LHC.

Search for the Standard Model Higgs boson decaying into  $b\bar{b}$  produced in association with top quarks decaying hadronically in  $p-p$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector.

Measurement of  $t\bar{t}$  production cross-section in the all-hadronic channel in  $p-p$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector.

Implementation, commissioning and maintenance of  $b$ -tagging algorithms at trigger level with the ATLAS detector.

**Postdoctoral Research Associate** Jan. 2006 – Oct. 2008

Member of the ATLAS Group at the Centre de Physique des Particules de Marseille UMR 6550, CNRS, Institut national de physique nucleaire et de physique des particules (IN2P3), Aix-Marseille Université

Development of data-based methods for the evaluation of  $b$ -tagging efficiency with the ATLAS detector.

Development of software tool aimed at interfacing track quality requirements with ATLAS condition database.

Sensitivity study for the Standard Model  $ttH(H \rightarrow b\bar{b})$  process with the ATLAS detector.

**Research Assistant** Jan. 2000 – Dec. 2005

Member of the DØ Group at Boston University's Physics Department

Search for the Technicolor process  $\rho_T \rightarrow W\pi_T$  with the DØ experience using multivariate analysis techniques.

Analysis of DØ data in events with two calorimeter jets, one reconstructed electron and missing transverse energy as final state for Technicolor searches.

Optimisation and evaluation of DØ  $b$ -tagging capability. Study of Secondary Vertex Algorithm performances in data and Monte Carlo simulations.

Implementation of the online beam position measurement algorithm using DØ tracking detector.

Fermilab's Main Injector beam emittance monitoring studies.

SUPERVISING  
EXPERIENCE

**Master 2:** S. Aoun (2008), N. Tannoury (2009), D. Carabet (2012), Y. Duan (2016), N. H. D. Nguyen (2016-2019, currently Postdoc at CPPM), G. Bartolini (2017).

**Master 1:** D. Minenna (2014).

**PhD thesis:** C. Bertella (2010 – 2013, currently CERN Fellow), D. Madaffari (2012 – 2015, currently data scientist at Datamaran), N. Hoang Dai (2016 – present), G. Bartolini (2017 – present).

THESIS COMMITTEES	<b>HDR:</b> V. Sordini, LPSC (Feb. 2019), <b>PhD:</b> B. Le, University of Melbourne (Jul. 2019), E. Nibigira, LPC (Nov. 2019)
CURRENT AND PAST GRANTS	<i>Search for new physics in top quark events with the ATLAS experiment</i> , France-Stanford Center for Interdisciplinary Studies, Sept. 2011 – Sept. 2012 (PI). <i>Probing the Electroweak Symmetry Breaking with the ATLAS detector (PESBLADe)</i> , Labex OCEVU, Oct. 2013 – present (PI). <i>Hbb+ttH@LHC</i> , ANR, Oct. 2014 – Oct. 2018.
SCIENTIFIC RESPONSIBILITIES	<i>Co-direction of the Particle Physics working group of the Institut de Physique de l'Univers (AMU)</i> (2019 – present). <i>Co-direction of the Particle Physics working group of the Labex OCEVU</i> (2014 – 2019). <i>Responsible for the online monitoring and member of offline software validation team for b-jet trigger slice (ATLAS)</i> (2014 – 2019). <i>Member of the Executive Committee (ComEx) of the Labex OCEVU</i> (2014 – 2019). <i>Analysis contact for the SUSY RPV multi-b search (ATLAS)</i> (2018 – present). <i>Analysis contact for the HTOP fully hadronic ttH(H → bb̄) analysis (ATLAS)</i> (2013 – present). <i>Co-convenership of the b-jet trigger group (ATLAS)</i> (2012 – 2014). <i>Co-direction of the physics working group on the ttH(H → bb̄) sensitivity study working group (ATLAS)</i> (2006 – 2008).
MOST RELEVANT PUBLICATIONS	<ol style="list-style-type: none"> <li>1. S. Diglio, L. Feligioni and G. Moulataka, <i>Stashing the stops in multijet events at the LHC</i>, Phys. Rev. D <b>96</b>, 55032 (2017) arXiv:1611.05850 [hep-ph].</li> <li>2. ATLAS Collaboration, <i>Search for the Standard Model Higgs boson decaying into bb̄ produced in association with top quarks decaying hadronically in pp collisions at √s = 8 TeV with the ATLAS detector</i>, JHEP <b>1605</b>, 160 (2016), arXiv:1604.03812 [hep-ex].</li> <li>3. ATLAS Collaboration, <i>Performance of b-Jet Identification in the ATLAS Experiment</i>, JINST <b>11</b>, no. 04, P04008 (2016), arXiv:1512.01094 [hep-ex].</li> <li>4. DØ Collaboration, <i>b-jet Identification in the DØ Experiment</i>, Nucl. Instrum. Methods in Phys. Res. Sect. A <b>620</b>, 490 (2010).</li> <li>5. DØ Collaboration, <i>Search for Techniparticles Decaying into e+jets at DØ</i>, Phys. Rev. Lett. <b>98</b>, 221801 (2007); hep-ex/0612013; Fermilab-Pub-06/450-E.</li> </ol>

CONTRIBUTIONS  
TO CONFERENCES

L. Feligioni. *Searches for  $t\bar{t}$  resonances with the ATLAS detector at the LHC*, on behalf of ATLAS collaboration. SUSY 2015, 23<sup>rd</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions, 23-29 August 2015, Lake Tahoe, California.

L. Feligioni. *4th generation searches at ATLAS*, on behalf of ATLAS collaboration. 36<sup>th</sup> International Conference for High Energy Physics, 4-11 July 2012, Melbourne, Australia. *PoS(ICHEP2012) 560*.

L. Feligioni. *Higgs at LHC*, on behalf of ATLAS and CMS collaborations. 21<sup>st</sup> International Workshop on Weak Interactions and Neutrinos, January 2007. Kolkata, India.

L. Feligioni. *Searches for techniparticles at  $D\bar{D}$* , on behalf of the  $D\bar{D}$  collaboration. Physics at LHC, July 2006. Cracow, Poland. *Acta Phys. Polon. B38, 2007*.

L. Feligioni. *Search for technicolor particles at  $D\bar{D}$* , on behalf of the  $D\bar{D}$  collaboration. Meeting of The Division of Particles and Fields of The American Physical Society, August 2004. Riverside, California. *Int. J. Mod. Phys. A20, 2005*.

L. Feligioni, S. Bauceron.  *$Wb\bar{b}$  production at  $D\bar{D}$* . Poster session. XXI International Symposium on Lepton and Photon Interaction at High Energies, August 2003. Fermilab, Batavia, Illinois.

L. Feligioni. *Search for Technicolor at  $D\bar{D}$  Run II*, on behalf of the  $D\bar{D}$  collaboration. A.P.S. Meeting, April 2002. Albuquerque, New Mexico.

TEACHING  
EXPERIENCE

**École Centrale Marseille,**

Dec. 2009 – Mar. 2010

- Lecturer on Option Générale, 30 hours: *Introduction to Particle Physics*.

## AWARDS

Boston University Physics Department: Goldhaber Prize for Achievements by a First Year Graduate Student, 2002.