

# Marco Delmastro

## Particle Physicist

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*Experimental high-energy physics, from detector prototyping and operations to large-scale data analysis and physics interpretation*

Higgs physics • QCD precision measurements • EFT interpretations  
Calorimetry • Readout Electronics • Data analysis • Statistics • Machine learning  
Teaching • Science dissemination

## Appointments

- 2023–present **Directeur de Recherche 1<sup>ère</sup> Classe, CNRS/IN2P3, LAPP, Annecy, France**
- 2021–2022 **Scientific Associate, CERN, Geneva, Switzerland**
- 2017–2023 **Directeur de Recherche 2<sup>ème</sup> Classe, CNRS/IN2P3, LAPP, Annecy, France**
- 2011–2017 **Chargé de Recherche 1<sup>ère</sup> Classe, CNRS/IN2P3, LAPP, Annecy, France**
- 2007–2011 **Research Physicist Staff, CERN, Geneva, Switzerland**
- 2005–2007 **Fellow, CERN, Geneva, Switzerland**
- 2003–2005 **Postdoctoral Research Associate, University of Milano, Milano, Italy**
- 1998–1999 **Postgraduate Research Associate, Microelectronics Group, CERN, Geneva, Switzerland**

## Education

- 2016 **Accreditation to Supervise Research (*Habilitation à Diriger des Recherches, HDR*), University of Grenoble-Alpes, France**  
Thesis: *From ADC counts to the Higgs boson: photons for physics measurements with the ATLAS experiment at the LHC Run 1*
- 1999–2003 **PhD in Nuclear and Subnuclear Physics (highest honours), University of Milano, Italy**  
Thesis: *Energy reconstruction and calibration algorithms for the ATLAS electromagnetic calorimeter*
- 1992–1998 **MSc in Physics (110/110 cum laude, highest honours), University of Torino, Italy**  
Thesis: *Measurement of the  $J/\psi$  production at the CERN SPS with the NA50 experiment*

## Services to the Profession

### Research Management

- 2023–present **ATLAS LAPP Team Leader, member of the ATLAS Collaboration Board**
- 2022–present **ALLEGRO LAPP Team Leader, member of the DRD6 Collaboration Board**
- 2022–present **FCC-PED LAPP Team Leader, FCC France contact for LAPP**
- 2020–present **Plenary European Committee for Future Accelerators (pECFA), member**
- 2012–present **ATLAS Liquid Argon (LAr) Group Representative, LAPP Team**
- 2015–2020 **French CERN Fellowship Selection Committee, member**

### Scientific Responsibilities and Coordination Roles

- 2026–present **FCC-PED Higgs Working Group, Convener**
- 2024–present **ATLAS LAr Phase II Calibration Upgrade, Coordinator, member of the ATLAS LAr Phase II Upgrade Steering Group**
- 2023–present **LHC Higgs Combination Group, Convener (ATLAS)**
- 2020–2022 **ATLAS Higgs Working Group, Convener, member of ATLAS Physics Coordination**
- 2018–2020 **LHC Higgs Cross-Section Working Group 2 (Higgs Properties), Convener (ATLAS)**

- 2017–2020 **ATLAS Analysis Contact**,  $H \rightarrow \gamma\gamma$  couplings analysis
- 2017–2020 **ATLAS LAr Phase II Calibration Upgrade activity**, Coordinator, member of the ATLAS LAr Phase II Upgrade Steering Group
- 2017–2020 **ATLAS LAr activities at LAPP**, Coordinator
- 2016–2017 **ATLAS Higgs HGamma Working Group**, Convener
- 2015–2016 **ATLAS Analysis Contact**, Search for Higgs-like diphoton resonances analysis
- 2012–2014 **ATLAS EGamma Combined Performance group**, Convener, member of ATLAS Physics Coordination
- 2011–2012 **ATLAS LAr Software and Data Preparation group**, Convener, member of the ATLAS LAr Steering Group
- 2011–2012 **ATLAS Photon Identification group**, Convener
- 2010–2011 **ATLAS Standard Model Direct Photons group**, Convener
- 2005–2010 **ATLAS LAr Calorimeter Electronic Calibration group**, Convener

### Research Evaluation Committees

- 2023–present **Swiss National Science Foundation**, grant reviewer
- 2016–present **Register of Expert Peer Reviewers for Italian Scientific Evaluation (REPRISE)**, member
  - 2023–2025 **Long baseline Neutrino Committee (LBNC)**, member, Fermilab, USA
  - 2017–2018 **LHCC panel reviewing the Phase-2 CMS Barrel Calorimeter Technical Design Report**, member

### Conference and Workshop Organization

- 2022–2025 **Higgs Conference**, International Organizing Committee, member, chair in 2025
  - 2022 **Program Committee**, Higgs 2022 Conference, Pisa, Italy
  - 2022 **Organizing Committee**, Higgs Hunting 2022 Workshop, Paris, France
- 2013–present **Organizing Committee**, Les Houches Workshop *Physics at the TeV Colliders*, Les Houches, France

### Awards and Grants

- 2025–2026 **ARIA ALLEGRO Readout electrode Integrated ASICs**, R&D Funding, USMB Annecy, France
- 2021–2025 **CNRS RIPEC Merit-based Bonus**, Prime individuelle au mérite scientifique, (Comp. 3)
- 2016–2021 **ANR PhotonPortal Project**, principal investigator
- 2014–2017 **CNRS Scientific Excellence Prize**, Prime d'Excellence Scientifique

### Editorial Activities

- 2011–present **Peer reviewer for scientific journals**, including *Physics Letters B*, *Nuclear Physics B*, *Journal of Instrumentation*, *The European Physical Journal C*, *Journal of High Energy Physics*, *Computer Physics Communications*, and *Particle Data Group*.
- 2009–present **Editorial Boards for internal review of ATLAS papers**, as of May 2025: 39 boards (22 as chair), including 25 papers (16 as chair) and 14 CONF notes (6 as chair).
- 2011–present **ATLAS Contact Editor**, as of May 2025: 11 papers and CONF notes (+ 1 ongoing), 3 PUB notes.
- 2009–2011 **ATLAS Collaboration Publication Committee**, member  
Author of the first version of the ATLAS publication  $\LaTeX$  template.

## Teaching

- 2017 **Accredited as Full Professor, Experimental Physics of Fundamental Interactions, Italy, Abilitazione Scientifica Nazionale, Prima Fascia, Settore 02/A1 (ASN 2016/2018)**
- 2012 **Accredited as Associate Professor, Experimental Physics of Fundamental Interactions, Italy, Abilitazione Scientifica Nazionale, Seconda Fascia, Settore 02/A1 (ASN 2012)**

### Courses

- 2026 **Visiting Professor, University of Torino, Torino, Italy, 16-hour course on *Calorimetry in particle physics* for PhD students.**
- 2025 **Faculty, École thématique IN2P3 en instrumentation *De la Physique au Détecteur 2025*, Roscoff, France, 3-hour course on *Calorimetry***
- 2025 **Faculty, École de Gif 2025 (*Future colliders and their physics*), Strasbourg, France, 1.5-hour course on *Technologies for future calorimeters***
- 2014–2023 **Faculty, ESIPAP School, Archamps, France, 15-hour course on *Experimental Subatomic Physics* (annually, 2014–2023)**
- 2014–2019 **Faculty, GraSPA Summer School, Annecy-le-Vieux, France, 2h lectures on *LHC Experimental Physics* (annually 2014–2019)**
- 2002–2005 **Teaching Assistant, BSc in Physics, University of Milano, Italy, course of *Computational Physics Laboratory***

### Recent Seminars and Colloquia

- 2024 **Living with a pre-teen Higgs boson: twelve years with the Higgs boson, and the next twelve years, Seminar, Université de Genève, Switzerland**
- 2022–2023 **Ten years with the Higgs boson, and the next ten years, Seminar, IJCLab (France), University of Tor Vergata (Italy), University of Milano (Italy), University of Krakow (Poland)**
- 2018 **What do we know about the Higgs boson?, Seminar, University of Cosenza (Italy)**

### Thematic School Organisation

- 2015–2017 **Organizing Committee, ENIGMASS Lecture Series, France, Topics: *Naturalness at LHC* (Annecy, 2015), *Dark Matter* (Grenoble, 2016), *Neutrino Physics* (Annecy, 2017)**

### Researcher and Teacher Training

- 2016 **Faculty, INFN Training Course, Italy, Case study: *Scientific blogs*, 1-hour lecture**
- 2014 **Faculty, CERN Italian Teacher Programme, CERN, Switzerland, *Introduction to Experimental Particle Physics*, 4-hour lectures**
- 2014 **Faculty, Summer School Science Communication Society, La Morra, Italy, *The visible researcher*, 8-hour lectures**
- 2012 **Faculty, XXIV Seminario Nazionale di Fisica Nucleare e Subnucleare, Otranto, Italy, *Scientific communication and public engagement*, 2-hour lectures**

## Student Supervision

### PhD theses

- 2025–2028 **Hind Taibi**, *Measurement of double Higgs boson production in the  $b\bar{b}\gamma\gamma$  channel with the ATLAS experiment using Run 2 and Run 3 data*
- 2022–2026 **Jeremy Couthures**, *Development of new machine-learning-based reconstruction algorithms for charged particles tracks in the ATLAS experiment*, defended on 31/03/2026, co-supervised with Dr. D. Rousseau, IJCLAB, France, and Dr. A. Vallier, L2IT, France.
- 2018–2022 **Luca Franco**, *Precision Higgs Physics and search for Physics Beyond the Standard Model with the Higgs Boson decaying into two photons with the ATLAS experiment at LHC*, defended on 13/01/2022 (CERN-THESIS-2022-026).
- 2016–2019 **Saskia Falke**, *Measurement of Higgs boson properties in the Higgs to diphoton channel with the ATLAS experiment, EFT interpretation of the Simplified Template Cross Section measurements and energy calibration of electrons and photons in ATLAS*, defended on 17/09/2019 (CERN-THESIS-2019-148)., co-supervised with Dr. T. Guillemin, LAPP, France.
- 2014–2017 **Kirill Grevtsov**, *Exploring the diphoton final state at the LHC at  $\sqrt{s} = 13$  TeV: searches for new particles, and the Higgs boson mass measurement with the ATLAS detector*, defended on 04/07/2017 (CERN-THESIS-2017-138)., co-supervised with Dr. I. Wingerter-Seez, LAPP, France.
- 2013–2017 **Simone Mazza**, *Search for new physics in the diphoton channel at the ATLAS experiment at the LHC*, defended on 27/02/2017 (CERN-THESIS-2017-010)., thesis co-supervised with Prof L. Carminati, University of Milano, Italy.
- 2012–2015 **Zuzana Barnovska**, *Diphoton measurements with the ATLAS detector at the LHC: search for new resonances and study of diphoton production in association with jets*, defended on 29/09/2015 (CERN-THESIS-2015-167).
- 2010–2013 **Maud Schwoerer**, *Études des états finals diphoton dans l'expérience ATLAS au LHC: mesure de sections efficaces différentielles, découverte d'une nouvelle résonance dans la recherche du boson de Higgs et étude de ses propriétés*, defended on 27/09/2013 (CERN-THESIS-2013-193)., co-supervised with Dr. I. Wingerter-Seez, LAPP, France.

### Other PhD projects

- 2012–2013 **Angel Campoverde**, *Search For Gravitons Decaying To Vector Bosons In Hadronic Final States in proton-proton Collisions at  $\sqrt{s} = 8$  TeV Collected With The ATLAS Detector*, defended on 12/08/2015, project: *Study of the Calibration Constants of the Electromagnetic Calorimeter (ATL-LARG-INT-2013-006)*, co-supervised with Prof. R. McCarthy, Stony Brook University, USA.
- 2012–2013 **Guillaume Lefebvre**, *Étalonnage des jets et mesure de la section efficace de production de paires de quarks top dans le canal hadronique à  $\sqrt{s} = 8$  TeV avec l'expérience ATLAS auprès du LHC*, defended on 26/09/2014 (CERN-THESIS-2014-234)., project: *Impact of the LAr High Voltage corrections on the electromagnetic energy response resolution (ATL-LARG-INT-2013-001)*, co-supervised with Prof. M. Ridet, LPNHE, France.
- 2009–2010 **Stefania Bordoni**, *Mesure de la section efficace de production des quarks beaux et charmés à partir de leur désintégration semi-leptonique en électrons avec l'expérience ATLAS dans les collisions protons-protons à  $\sqrt{s} = 7$  TeV au LHC*, defended on 16/09/2011 (CERN-THESIS-2011-246)., project: *Effect of electronic calibration constant variations on reconstructed cell energy in the ATLAS electromagnetic calorimeter (ATL-LARG-INT-2011-001)*, co-supervised with Prof. M. Ridet, LPNHE, France.
- 2007–2009 **Carolina Gabaldon Ruiz**, *Calibration of the ATLAS electromagnetic calorimeter and search of the  $W'$  exotic boson*, defended on 24/03/2010, project: *Electronic calibration of the ATLAS electromagnetic calorimeter endcaps. Measurement of the drift time in the ATLAS electromagnetic calorimeter using cosmic pulses (ATL-LARG-INT-2009-010)*, co-supervised with Prof. J. Del Peso, University of Madrid, Spain.

## Master Students

- 2025 **Hind Taibi**, *Photon Identification Optimization in the ATLAS Detector for the  $HH \rightarrow \gamma\gamma b\bar{b}$  Measurement*, M2 internship, Paris-Saclay University, France.
- 2024 **Yann Chardon-Grossard**, *Optimization of the photon identification criteria in the ATLAS detector using machine learning on Run 2 dataset*, M2 internship, University of Clermont-Auvergne, France.
- 2024 **Hind Taibi**, *Measurement of the  $ZH, H \rightarrow ZZ^*$  Cross Section in the Four Lepton Channel at FCC-ee*, M1 internship, Paris-Saclay University, France.
- 2023–2024 **Marta Cinci**, *Photon identification optimization for di-Higgs production search in the  $\gamma\gamma b\bar{b}$  final state with the ATLAS detector*, Master Thesis (*Laurea Magistrale*), co-supervised with Prof. L. Carminati, Università degli Studi di Milano, Italy.
- 2018 **Luca Franco**, *Study of the Higgs boson production in Vector Boson Fusion through its decay into two photons with the ATLAS detector at LHC*, Master Thesis (*Laurea Magistrale*), co-supervised with Prof. E. Meoni, Università della Calabria, Italy.
- 2017 **Florian Eble**, *Study of LAr Calibration from Run 2 for phase II upgrade*, M1 internship, co-supervised with Dr. N. Lorenzo Martinez.

## Thesis Referee

- 2026 **Trisha Debnath**, Institut Polytechnique de Paris, France, Supervisors: Dr. Andrew Gilbert and Dr. Florian Beaudette. Defence foreseen in October 2026.
- 2026 **Andro Petkovic**, University of Strasbourg, France, Supervisors: Dr. Christophe Ochando and Dr. Toni Sculac. Defence foreseen in July 2026.
- 2024 **Geliang Liu**, *Searches for New Physics Using the Higgs Sector in Leptonic Final States and Beam Tests of the CMS High Granularity Calorimeter*, Institut Polytechnique de Paris, France, Supervisor: Dr. Roberto Salerno. Defended on 17/12/2024.
- 2023 **Mario Sessini**, *Search for CP violation in the Yukawa coupling of the tau lepton with the CMS experiment at the LHC*, University of Strasbourg, France, Supervisor: Dr. Anne-Catherine Le Bihan. Defended on 15/12/2023.
- 2023 **Aleksei Luikianchiuk**, *Measurement of Higgs couplings using the diphoton channel and EFT interpretation with the ATLAS experiment using the full Run 2 data of LHC. Calibration of the electromagnetic calorimeter*, Paris-Saclay University, France, Supervisor: Dr. Marc Escalier. Defended on 27/09/2023.
- 2022 **Jelena Mijuskovic**, *Measurement of the  $N$ -jettiness variables in the production of  $Z$  boson events with the CMS detector and performance of its electromagnetic calorimeter*, Paris-Saclay University, France, and University of Podgorica, Montenegro, Supervisors: Dr. Federico Ferri and Prof. Nataša Raičević. Defended on 06/06/2022.
- 2021 **Marko Stamenkovic**, *Charming Higgs bosons. Constraint on the Higgs-charm coupling from a search for Higgs boson decays to charm quarks with the ATLAS detector*, Universiteit van Amsterdam, the Netherlands, Supervisors: Prof. Dr. W. Verkerke and Dr. T.A. du Pree. Defended on 08/07/2021.
- 2020 **Riccardo Salvatico**, *Search for the rare decay of the  $W$  boson into a pion and a photon in proton-proton collisions at  $\sqrt{s} = 13$  TeV with the CMS experiment*, Università di Torino, Italy, Supervisors: Prof. Stefano Argirò and Dr. Mario Pelliccioni. Defended on 29/01/2021.
- 2020 **Konie Al Khoury**, *Measurements of the Higgs boson produced in association with a vector boson and decaying to a pair of  $b$ -quarks with the ATLAS detector*, Université Paris-Saclay, France, Supervisor: Dr. Nicolas Morange. Defended on 23/09/2020.
- 2019 **Chiara Amendola**, *Vector Boson Fusion trigger and search for Higgs boson pair production at the LHC in the  $b\bar{b}\tau\tau$  channel with the CMS detector*, Institut Polytechnique de Paris, France, Supervisor: Dr. Florian Beaudette. Defended on 27/11/2019.

2018 **Giuseppe Callea**, *Measurement of isolated-photon plus jet production in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector at the LHC*, Università della Calabria, Italy, Supervisors: Prof. Enrico Tassi, Prof. Claudia Glasman and Prof. Juan Terrón. Defended on 19/04/2018.

### Individual PhD Thesis Committees

2025–2028 **Tom Fournier**, APC Paris, France, Supervisor: Dr. Gregorio Bernardi

2025–2028 **Dian Yu**, APC Paris, France, Supervisor: Dr. Giovanni Marchiori

2025–2028 **Adrien Sabard**, Lyon University, France, Supervisor: Dr. Gaelle Boudoul

2024–2027 **Warren Guerrin**, *Higgs boson self-coupling study in  $HH \rightarrow b\bar{b}\gamma\gamma$  channel with geometric deep learning techniques*, University of Toulouse, France, Supervisors: Dr. Jan Stark and Dr. Alexis Vallier.

### CERN Summer Students

2018 **Dimitrios Sidiropoulos Kontos**, *Machine Learning techniques for precision Higgs physics, exploiting the Higgs boson decays into two photons*

2010 **Maud Schwoerer**, *First evidence of  $\Upsilon \rightarrow e^+e^-$  events at  $\sqrt{s} = 7$  TeV in the ATLAS detector*

2007 **Kilian Mueller**, *Studies on longitudinal weight extraction for very low energy electrons*

2006 **Martin Skou Andersen**, *Optimization of clustering algorithms for very low energy electrons*

## Summary of scientific production

### Publications

As of February 2026, more than **1500 publications** in peer-reviewed scientific journals:

INSPIRE • SCOPUS • Google Scholar

### Selected publications

10 publications selected among those representative of my research achievements and counting major personal contribution:

- [1] ATLAS Collaboration, “Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC”, in: *Phys. Lett. B* 716 (2012), pp. 1–29, DOI: 10.1016/j.physletb.2012.08.020, arXiv: 1207.7214 [hep-ex].
- [2] ATLAS Collaboration, “Electron and photon energy calibration with the ATLAS detector using LHC Run 1 data”, in: *Eur. Phys. J. C* 74.10 (2014), p. 3071, DOI: 10.1140/epjc/s10052-014-3071-4, arXiv: 1407.5063 [hep-ex].
- [3] ATLAS Collaboration, “Measurement of the Higgs boson mass from the  $H \rightarrow \gamma\gamma$  and  $H \rightarrow ZZ^* \rightarrow 4\ell$  channels with the ATLAS detector using 25 fb<sup>-1</sup> of  $pp$  collision data”, in: *Phys. Rev. D* 90.5 (2014), p. 052004, DOI: 10.1103/PhysRevD.90.052004, arXiv: 1406.3827 [hep-ex].
- [4] ATLAS and CMS Collaborations, “Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC  $pp$  collision data at  $\sqrt{s} = 7$  and 8 TeV”, in: *JHEP* 08 (2016), p. 045, DOI: 10.1007/JHEP08(2016)045, arXiv: 1606.02266 [hep-ex].
- [5] ATLAS Collaboration, “Search for resonances in diphoton events at  $\sqrt{s}=13$  TeV with the ATLAS detector”, in: *JHEP* 09 (2016), p. 001, DOI: 10.1007/JHEP09(2016)001, arXiv: 1606.03833 [hep-ex].
- [6] ATLAS Collaboration, “Measurement of the properties of Higgs boson production at  $\sqrt{s} = 13$  TeV in the  $H \rightarrow \gamma\gamma$  channel using 139 fb<sup>-1</sup> of  $pp$  collision data with the ATLAS experiment”, in: *JHEP* 07 (2023), p. 088, DOI: 10.1007/JHEP07(2023)088, arXiv: 2207.00348 [hep-ex].
- [7] ATLAS Collaboration, “A detailed map of Higgs boson interactions by the ATLAS experiment ten years after the discovery”, in: *Nature* 607.7917 (2022), pp. 52–59, DOI: 10.1038/s41586-022-04893-w, arXiv: 2207.00092 [hep-ex].
- [8] ATLAS Collaboration, “Combined Measurement of the Higgs Boson Mass from the  $H \rightarrow \gamma\gamma$  and  $H \rightarrow ZZ^* \rightarrow 4\ell$  Decay Channels with the ATLAS Detector Using  $s=7, 8,$  and 13 TeV  $pp$  Collision Data”, in: *Phys. Rev. Lett.* 131.25 (2023), p. 251802, DOI: 10.1103/PhysRevLett.131.251802, arXiv: 2308.04775 [hep-ex].
- [9] ATLAS Collaboration, “Interpretations of the ATLAS measurements of Higgs boson production and decay rates and differential cross-sections in  $pp$  collisions at  $\sqrt{s} = 13$  TeV”, in: *JHEP* 11 (2024), p. 097, DOI: 10.1007/JHEP11(2024)097, arXiv: 2402.05742 [hep-ex].
- [10] ATLAS Collaboration, “Study of Higgs boson pair production in the  $HH \rightarrow b\bar{b}\gamma\gamma$  final state with 308 fb<sup>-1</sup> of data collected at  $\sqrt{s} = 13$  TeV and 13.6 TeV by the ATLAS experiment”, in: (July 2025), arXiv: 2507.03495 [hep-ex].

## Presentations at international conferences

- [1] Marco Delmastro, *Di-Higgs combination, single-Higgs constraint and EFT interpretation in ATLAS and CMS*, presented at *Higgs Pairs 2025*, Isola d'Elba, Italy, May 11–17, 2025. Slides available at <https://cds.cern.ch/record/2932647>.
- [2] Marco Delmastro, *Higgs boson properties: mass, width, spin and CP*, presented at *Higgs@10, Scientific Symposium to celebrate the 10th anniversary of the Higgs boson discovery*, CERN, Geneva, Switzerland, July 4, 2022. Slides available at <https://cds.cern.ch/record/2824995>.
- [3] Marco Delmastro, *Higgs couplings and properties measurements: Recent Run-2 results and HL-LHC prospects*, presented at the *31<sup>st</sup> Rencontres de Blois, Particle Physics and Cosmology*, Blois, France, 2–7 June, 2019. Slides available at <https://cds.cern.ch/record/2677802>.
- [4] Marco Delmastro, *Diphoton searches in ATLAS*, presented at the *51<sup>st</sup> Rencontres de Moriond on Electroweak Interactions and Unified Theories*, La Thuile, Italy, March 12–19, 2016. Slides available at <https://cds.cern.ch/record/2824995>, Proceedings available at <https://cds.cern.ch/record/2150667>.
- [5] Marco Delmastro, *Results of  $H \rightarrow \gamma\gamma$  and  $Z\gamma$  from ATLAS*, presented at the *2013 Aspen Winter Conference on particle physics: Higgs Quo Vadis*, Aspen, CO, USA, March 10–15, 2013. Slides available at <https://cds.cern.ch/record/1529692>.
- [6] Marco Delmastro, *Photon and diphoton production at ATLAS*, presented at the *15<sup>th</sup> Lomonosov Conference*, Moscow State University, Moscow, Russia, August 8–24, 2011. Proceedings available at <https://arxiv.org/abs/1111.2223>.
- [7] Marco Delmastro, *Searches for the Higgs boson at the LHC*, presented at the *XXI Rencontres de Blois*, Blois, France, June 21–26, 2009. Proceedings available at <https://arxiv.org/abs/0909.0493>.
- [8] Marco Delmastro, *Recent results of the ATLAS barrel combined test beam*, presented at the *12<sup>th</sup> International Conference on Calorimetry in High Energy Physics (CALOR 2006)*, Chicago, USA, June 5–9, 2006. Proceedings available at <https://doi.org/10.1063/1.2396973>.
- [9] Marco Delmastro, *A stand-alone signal reconstruction and calibration algorithm for the ATLAS electromagnetic calorimeter*, presented at *IEEE Nuclear Science Symposium 2003*, Portland, OR, USA, October 19–25, 2003.
- [10] Marco Delmastro, *The ATLAS Liquid Argon calorimeters read-out system*, presented at *IEEE Nuclear Science Symposium 2003*, Portland, OR, USA, October 19–25, 2003.

## Recent technical reports and feasibility studies

- [1] M. Benedikt et al., *Future Circular Collider Feasibility Study Report: Volume 1, Physics, Experiments, Detectors*, Apr. 2025, DOI: 10.17181/CERN.9DKX.TDH9, arXiv: 2505.00272 [hep-ex].
- [2] A. Abada et al., “FCC-ee: The Lepton Collider”, in: *The European Physical Journal Special Topics* 228.2 (2019), pp. 261–623, DOI: 10.1140/epjst/e2019-900045-4, URL: <https://doi.org/10.1140/epjst/e2019-900045-4>.
- [3] M. Bicer et al., *First Look at the Physics Case of TLEP*, ed. by Norman A. Graf, Michael E. Peskin, and Jonathan L. Rosner, 2014, DOI: 10.1007/JHEP01(2014)164, arXiv: 1308.6176 [hep-ex].
- [4] ATLAS Collaboration, *Technical Design Report for the Phase-II Upgrade of the ATLAS LAr Calorimeter*, tech. rep. CERN-LHCC-2017-018, ATLAS-TDR-027, 2017, URL: <https://cds.cern.ch/record/2285582>.
- [5] ATLAS Collaboration, *ATLAS Liquid Argon Calorimeter Phase-I Upgrade Technical Design Report*, tech. rep. CERN-LHCC-2013-017, ATLAS-TDR-022, 2013, URL: <https://cds.cern.ch/record/1602230>.

## Outreach

### Public events

- 2015–present **Il bosone di Higgs in un bicchiere d’acqua**, *The Higgs Boson in a glass of water*, a popular science conference designed for high school students and presented in dozens of schools across Italy.
- 2012–present **Public conferences and seminars**
- Voir l’invisible : comment observe-t-on le boson de Higgs avec le détecteur ATLAS, *Seeing the invisible: how do we observe the Higgs boson with the ATLAS detector*, Les Mercredis du LAPP ed du LAPTh (2026)
  - Mattoncini elementari, *Elementary Brick*, INFN Kids Summer Camp (2020)
  - Da dove viene il 99% della massa della materia ordinaria?, *Where does 99% of ordinary matter come from?*, Leeds EN-IT Interpreting Practice Sessions (2021)
  - Misurare le proprietà del bosone di Higgs, *How to measure the Higgs boson properties*, La Via delle Scienze (2020)
  - Comunicare la fisica al tempo dei social?, *How to communicate physics in the social network era?*. Università degli Studi di Milano, Italy (2017)
  - Il compendio delle teorie squinternate, *The compendium of tattered theories*, Festival della Comunicazione, Camogli, Italy (2016)
  - Il bosone di Higgs spiegato col LEGO, *Explaining the Higgs Boson with LEGO bricks*, Festival delle Scienze, Rome, Italy (2015)
  - La danza della scienza, *The dance of science*, Orvieto Scienza, Orvieto, Italy (2015)
  - Si può spiegare il bosone di Higgs?, *Can the Higgs boson be explained?*, Festival della Comunicazione, Camogli, Italy (2015)
  - Alla ricerca dell’infinitamente piccolo, *Looking For the Immeasurably Small*, TEDx Lake Como, Italy (2012)
- 2016–present **LAPP Outreach volunteer**, e.g. *Fête de la Science (2016)*, *Ten-year anniversary of the Higgs boson discovery (2022)*, *EUTOPIA space visits*.
- 2005–present **CERN Outreach volunteer**, e.g. *ATLAS Guide (Italian, English, French)*, *CERN Open Days (2013, 2019)*.

### Books

- 2014 **Particelle familiari**, *Familiar particles*, Laterza, Italy, 2014  
“Maria Antonia Gervasio” Literary Award *Le Due Culture* for best popular-science book, 2014

### Media and Press

- 2016 **Inside CERN**, documentary movie by BBC 2 Horizon, UK
- 2015 **Tutta colpa di Einstein**, *It’s all Einstein’s fault!*, TV show by Italia 1, Italy
- 2014 **Comics & Science @ CERN**, *OraMai (NeverNow)*, comic book
- 2012–2015 **DafDaf**, *Italian monthly magazine for children aged 6-11*, bi-monthly science section
- 2012–present Numerous articles and interviews in newspapers and magazines (e.g. *Il Manifesto*, *Le Scienze*)
- 2010–present Numerous interviews and panel interventions on Italian and Swiss public radios (e.g. *Radio RAI*, *Radio Popolare*, *RTS*)

### Blogs and Podcasts

- 2006–present **Borborigmi di un fisico renitente**, *Rumbles of a resistant physicist*, a popular-science blog in Italian, focused on particle physics vulgarization
- 2020 **Tu che sei un fisico**, *You who are a physicist*, a podcast where a particle physicist answers any question sent by the audience, 8 episodes produced in 2020.
- 2010 **Bloggging ICHEP 2010**, collective forum of the 35<sup>th</sup> edition of the International Conference on High Energy Physics, Paris (2010)

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## Languages

Italian Native speaker  
English Fluent (CEFR level C2)  
French Fluent (CEFR level C2)  
Spanish Basic proficiency (CEFR level A2)

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## References

### **Guillaume Unal**

*ATLAS Deputy Spokesperson  
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