

**Name:** Bogdan MALAESCU

**Date of Birth:** 19 September 1982

**Nationalities:** French, Romanian

**URL for web site:** <http://lpnhe.in2p3.fr/malaescu>

**Professional experience:**

- Since October 2016: *CR1 at CNRS (staff), based at the LPNHE laboratory, France*
- Since March 2018: *Scientific Associate with CERN*
- October 2012 – September 2016: *CR2 at CNRS (staff), based at the LPNHE laboratory, France*
- October 2010 – September 2012: *fellow in the ATLAS group at CERN*
- Since 2010: *member of the ATLAS collaboration*
- *Referee* for the EPJ C (2012-), JINST (2014-), PRD (2016-) and NIM A (2016-) journals
- May 2015 – June 2016: *Co-coordinator of the project “Jets and photons with the ATLAS detector: performance and physics”, for the call “Argentine 2015” (Sorbonne Paris Cité)*
- 2007 – 2014: *member of the BABAR collaboration*

**Responsibilities in the ATLAS experiment:**

- Since October 2017: *convener of the “Standard Model” group*
- October 2014 – September 2016: *convener of the “Statistics Forum”*
- April 2014 – March 2015: *convener of the “Jets & photons” sub-group of the “Standard Model” group*
- October 2012 – September 2013: *convener of the “Jet energy scale and jet energy resolution” sub-group of the “JetEmiss” group*
- 2018: Co-organizer of a workshop on the ATLAS forward physics program and a workshop on the studies done using low-mu data collected with ATLAS
- 2017: Co-organizer of two workshops on ATLAS data reinterpretation
- Spring – Summer 2015: *coordinator* of the effort for the first jet cross section measurement at 13 TeV, made public for summer conferences, shortly after the data-taking, ATLAS-CONF-2015-034
- 2013 – 2014: *ATLAS representative* for the studies of the correlations of the jet energy scale uncertainties, between ATLAS and CMS, for the 2011 data; conclusions presented at the TopLHC public meeting; ATL-PHYS-PUB-2014-020, CMS PAS JME-14-003;  
2015: Contribution to similar effort for 2012 data, ATL-PHYS-PUB-2015-049, CMS PAS JME-15-001
- Since 2012: *ATLAS representative* in the “Steering group” of the HERAFitter project
- Since 2011: *Contact person* between the Standard Model group and the Statistics Forum
- 2011 – 2014: *Co-organizer and contributor* to three ATLAS workshops on unfolding
- Since 2011: *Co-editor* of the ATLAS recommendations on unfolding
- Since 2011: *Editor* for several ATLAS publications and *member of several editorial boards*
- 2017: *Editor* of the “Masses and Fundamental Interactions” section of the LPNHE activity report covering the period 2015-2017
- *Representative* of the ATLAS LPNHE group for organizing the Physics ATLAS France workshop in November 2014
- *Contributor* to the efforts of harmonization among ATLAS analyses for truth and reconstructed objects, <http://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PUBNOTES/ATL-PHYS-PUB-2015-013>
- 2011 – 2012: work as *data quality expert* for the ATLAS Liquid Argon Calorimeter

## **Studies:**

2007-2010: PhD thesis at the University Paris 11 at “Laboratoire de l’Accélérateur Linéaire”, Orsay, supervised by Michel Davier and Sebastien Descotes-Génon

2006-2007: Master “Concepts Fondamentaux de la Physique”, Option of Theoretical Physics – ENS Paris, Ecole Polytechnique, Universities Paris 6 and 11, ENS Cachan – obtained degree with mention “Good”

2003-2007: Engineer studies at Ecole Polytechnique, Paris – obtained engineer and master degree

2001-2003: Computer science studies at Polytechnic University of Bucharest

## **Publications with significant personal contributions:**

1. “Search for low-mass dijet resonances using trigger-level jets with the ATLAS detector in pp collisions at  $\sqrt{s}=13$  TeV”, the ATLAS Collaboration, arxiv:1804.03496.
2. “Measurement of inclusive jet and dijet cross-sections in proton-proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector”, the ATLAS Collaboration, arxiv:1711.02692. *2 cit.*<sup>(\*)</sup>
3. “Reevaluation of the hadronic vacuum polarisation contributions to the Standard Model predictions of the muon  $g-2$  and  $\alpha(m_Z)$  using newest hadronic cross-section data”, M. Davier et al., Eur.Phys.J. C77 (2017) no.12, 827, arXiv:1706.09436. *16 cit.*<sup>(\*)</sup>
4. “Measurement of the inclusive jet cross-sections in proton-proton collisions at  $\sqrt{s}=8$  TeV with the ATLAS detector”, the ATLAS Collaboration, JHEP 09 (2017) 020, arxiv:1706.03192. *11 cit.*<sup>(\*)</sup>
5. “Jet energy scale measurements and their systematic uncertainties in proton-proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector”, the ATLAS Collaboration, Phys. Rev. D 96 (2017) 072002, arXiv:1703.09665. *84 cit.*<sup>(\*)</sup>
6. “Search for new phenomena in dijet events using  $37 \text{ fb}^{-1}$  of pp collision data collected at  $\sqrt{s}=13$  TeV with the ATLAS detector”, the ATLAS Collaboration, Phys. Rev. D 96 (2017) 052004, arXiv:1703.09127. *65 cit.*<sup>(\*)</sup>
7. “Measurement of the inclusive jet cross-section in proton-proton collisions at  $\sqrt{s}=7$  TeV using  $4.5 \text{ fb}^{-1}$  of data with the ATLAS detector”, ATLAS Collaboration, JHEP 1502(2015)153, arXiv:1410.8857. *68 cit.*<sup>(\*)</sup>
8. “HERAFitter, Open Source QCD Fit Project”, S. Alekhin et al., Eur. Phys. J. C 75 (2015) 7, 304, arXiv:1410.4412. *106 cit.*<sup>(\*)</sup>
9. “Jet energy measurement and its systematic uncertainty in proton-proton collisions at  $\sqrt{s}=7$  TeV with the ATLAS detector”, the ATLAS collaboration, Eur. Phys. J. C 75 (2015) 1, 17, arXiv:1406.0076. *429 cit.*<sup>(\*)</sup>
10. “Measurement of dijet cross sections in pp collisions at 7 TeV centre-of-mass energy using the ATLAS detector”, the ATLAS collaboration, JHEP 1405 (2014) 059, arXiv:1312.3524. *66 cit.*<sup>(\*)</sup>
11. “Update of the ALEPH non-strange spectral functions from hadronic tau decays”, M. Davier et al., Eur.Phys.J. C74 (2014) 2803, arXiv:1312.1501. *80 cit.*<sup>(\*)</sup>
12. “Comments on “An Update of the HLS Estimate of the Muon  $g-2$ ” by M. Benayoun et al., arXiv:1210.7184”, M. Davier and B. Malaescu, Eur. Phys. J. C (2013) 73: 2597, arXiv:1306.6374. *9 cit.*<sup>(\*)</sup>
13. “Precision Measurement of the  $e^+e^- \rightarrow K^+K^-(\text{gamma})$  Cross Section with the Initial-State Radiation Method at BaBar”, the BABAR collaboration, Phys. Rev. D 88 (2013) 032013, arXiv:1306.3600. *76 cit.*<sup>(\*)</sup>
14. “Measurement of the inclusive jet cross section in pp collisions at  $\sqrt{s}=2.76$  TeV and comparison to the inclusive jet cross section at  $\sqrt{s}=7$  TeV using the ATLAS detector”, the ATLAS collaboration, Eur. Phys. J C 73 (2013) 2509, arXiv:1304.4739. *123 cit.*<sup>(\*)</sup>
15. “Precise Measurement of the  $e^+e^- \rightarrow \pi^+\pi^-(\text{gamma})$  Cross Section with the Initial-State Radiation Method at BABAR”, the BABAR collaboration, Phys. Rev. D 86 (2012) 032013, arXiv:1205.2228. *129 cit.*<sup>(\*)</sup>
16. “Evaluation of the Strong Coupling Constant  $\alpha_s$  Using the ATLAS Inclusive Jet Cross-Section Data”, B. Malaescu and P. Starovoitov, Eur.Phys.J. C72 (2012) 2041, arXiv:1203.5416. *40 cit.*<sup>(\*)</sup>
17. “Jet energy measurement with the ATLAS detector in proton-proton collisions at  $\sqrt{s}=7$  TeV”, the ATLAS collaboration, Eur. Phys. J. C 73 (2013) 2304, arXiv:1112.6426. *900 cit.*<sup>(\*)</sup>
18. “Measurement of inclusive jet and dijet production in pp collisions at  $\sqrt{s}=7$  TeV using the ATLAS detector”, the ATLAS collaboration, Phys. Rev. D 86 (2012) 014022, arXiv:1112.6297. *265 cit.*<sup>(\*)</sup>

19. “Reevaluation of the Hadronic Contributions to the Muon  $g-2$  and to  $\alpha(M_Z)$ ”, M. Davier et al., Eur.Phys.J.C71:1515, 2011, arXiv:1010.4180. 683 cit.<sup>(\*)</sup>
20. “A note on renormalon models for the determination of  $\alpha_s(M_\tau)$ ”, S. Descotes-Genon and B. Malaescu, arXiv:1002.2968. 23 cit.<sup>(\*)</sup>
21. “Reevaluation of the hadronic contribution to the muon magnetic anomaly using new  $e^+e^- \rightarrow \pi^+\pi^-$  cross section data from BABAR”, M.Davier et al., Eur.Phys.J.C66:1-9,2010, arXiv:0908.4300. 191 cit.<sup>(\*)</sup>
22. “Precise measurement of the  $e^+e^- \rightarrow \pi^+\pi^-$  (gamma) cross section with the Initial State Radiation method at BABAR”, the BABAR collaboration, Phys. Rev. Lett. 103:231801, 2009, arXiv:0908.3589. 226 cit.<sup>(\*)</sup>
23. “An Iterative, dynamically stabilized method of data unfolding”, B.Malaescu, arXiv:0907.3791. 56 cit.<sup>(\*)</sup>
24. “The Discrepancy Between tau and  $e^+e^-$  Spectral Functions Revisited and the Consequences for the Muon Magnetic Anomaly”, M. Davier et al., Eur.Phys.J.C66:127-136,2010, arXiv:0906.5443. 132 cit.<sup>(\*)</sup>
25. “The Determination of  $\alpha_s$  from Tau Decays Revisited”, M. Davier et al., Eur.Phys.J.C56:305-322, 2008, arXiv:0803.0979. 187 cit.<sup>(\*)</sup>

### **Book:**

2014-2015: “Hadron Contribution to Vacuum Polarization” chapter (M. Davier et al.) part of the book “The Standard Theory of Particle Physics”, edited by Luciano Maiani and Gigi Rolandi, in the series “Essays to Celebrate CERN’s 60th Anniversary”, World Scientific Publishing, ISSN 1793-1339, 2016

### **Conference and publication notes with significant personal contributions:**

1. ATLAS-CONF-2017-063: “In-situ measurements of the ATLAS large-radius jet response in 13 TeV pp collisions”, the ATLAS collaboration, <https://cds.cern.ch/record/2275655>. 3 cit.<sup>(\*)</sup>
2. ATLAS-CONF-2017-048: “Measurement of inclusive jet and dijet cross-sections in proton-proton collisions at  $\sqrt{s} = 13\text{TeV}$  with the ATLAS detector”, the ATLAS collaboration, <https://cds.cern.ch/record/2273864>. 2 cit.<sup>(\*)</sup>
3. ATLAS-CONF-2016-092: “Measurement of inclusive-jet cross-sections in proton-proton collisions at  $\sqrt{s}=13\text{ TeV}$  centre-of-mass energy with the ATLAS detector”, the ATLAS collaboration, <https://cds.cern.ch/record/2209210>. 4 cit.<sup>(\*)</sup>
4. ATLAS-CONF-2016-059: “Search for scalar diphoton resonances with 15.4~fb<sup>-1</sup> of data collected at  $\sqrt{s}=13\text{ TeV}$  in 2015 and 2016 with the ATLAS detector”, the ATLAS collaboration, <https://cds.cern.ch/record/2206154>. 104 cit.<sup>(\*)</sup>
5. ATLAS-CONF-2015-034: “Measurement of the inclusive-jet cross section in proton-proton collisions at 13 TeV centre-of-mass energy with the ATLAS detector”, the ATLAS collaboration, <https://cds.cern.ch/record/2038145>. 12 cit.<sup>(\*)</sup>
6. ATLAS-CONF-2015-037: “Monte Carlo Calibration and Combination of In-situ Measurements of Jet Energy Scale, Jet Energy Resolution and Jet Mass in ATLAS”, the ATLAS collaboration, <https://cds.cern.ch/record/2044941>. 76 cit.<sup>(\*)</sup>
7. ATLAS-CONF-2015-057: “Determination of the jet energy scale and resolution at ATLAS using  $Z/\gamma$ -jet events in data at  $\sqrt{s}=8\text{ TeV}$ ”, the ATLAS collaboration, <https://cds.cern.ch/record/2059846>. 22 cit.<sup>(\*)</sup>
8. ATL-PHYS-PUB-2015-015: “Jet Calibration and Systematic Uncertainties for Jets Reconstructed in the ATLAS Detector at  $\sqrt{s}=13\text{ TeV}$ ”, the ATLAS collaboration, <https://cds.cern.ch/record/2037613>
9. ATL-PHYS-PUB-2014-020, CMS PAS JME-14-003: “Jet energy scale uncertainty correlations between ATLAS and CMS, ATLAS and CMS collaborations”, <https://cds.cern.ch/record/1956734>. 10 cit.<sup>(\*)</sup>
10. ATL-PHYS-PUB-2015-049, CMS PAS JME-15-001: “Jet energy scale uncertainty correlations between ATLAS and CMS at  $\sqrt{s}=8\text{ TeV}$ ”, the ATLAS and CMS collaborations, <https://cds.cern.ch/record/2103759>. 10 cit.<sup>(\*)</sup>

<sup>(\*)</sup> The citation records are based on <http://inspirehep.net/> as of the 29/01/2018.

## **Talks at conferences and workshops:**

1. February 2018: “Hadronic contribution to  $(g-2)_\mu$  from  $e^+e^-$  annihilations” - plenary talk at the “Workshop on hadronic vacuum polarization contributions to muon  $g-2$ ” and contribution to the discussion session on R-measurements (KEK, Japan)
2. January 2018: “Standard model measurements with the ATLAS detector” - plenary talk on behalf of the ATLAS collaboration at the workshop HEP2018 (Valparaiso, Chile)
3. June 2017: “Hadronic contribution to  $(g-2)_\mu$  from  $e^+e^-$  annihilations” - plenary talk at the “First Workshop of the Muon  $g-2$  Theory Initiative” (Fermilab, USA)
4. March 2017: “Scale choices, uncertainties and correlations for jet observables” - plenary talk at the workshop “Taming Unphysical Scales for Physical Predictions”, Cambridge
5. September 2016: “Recent highlights of hard QCD with W and Z bosons, jets and photons by ATLAS” - plenary talk on behalf of the ATLAS collaboration, at the “LHC Days in Split” conference
6. October 2015: “ $\alpha_s$  determinations from ATLAS (status & plans)” - invited plenary talk, on behalf of the ATLAS collaboration, at the “FCC-ee- $\alpha_s$ ” workshop, CERN ; ATL-PHYS-PROC-2015-158, <https://cds.cern.ch/record/2108917/> , arXiv:1512.05194
7. July 2014: “Measurements of jet production properties in pp collisions with the ATLAS detector” - talk on behalf of the ATLAS collaboration, in the Strong Interactions and Hadron Physics session at the ICHEP conference (Valencia, Spain)
8. March 2014: “Measurements of low energy  $e^+e^-$  hadronic cross sections and implications for the muon  $g-2$ ” - plenary talk on behalf of the BABAR collaboration in the QCD session, at the conference “Rencontres de Moriond” (la Thuile, Italy): arXiv:1407.4685
9. Mai 2013: “Measurement of hadronic cross sections at BaBar with ISR and implications for the muon  $(g-2)$ ” - plenary talk on behalf of the BABAR collaboration at the conference PHOTON 2013 (Paris), arXiv:1404.6887
10. April 2013: convener of the “QCD and Hadronic Final State” session at the conference DIS2013, Marseille; plenary talk summarizing the experimental talks of the session, PoS DIS2013 (2013) 020
11. March 2013: “Hadronic tau and  $e^+e^-$  spectra, contribution to  $(g-2)_\mu$  and QCD studies” - plenary talk and convener of one session at the Workshop on Determination of the Fundamental Parameters of QCD (Singapore), Mod. Phys. Lett. A 28 (2013) 1360011
12. July 2012: “Evaluation of  $\alpha_s$  using the ATLAS inclusive jet cross-section data” - plenary talk at the conference QCD Montpellier, Nucl. Phys. Proc. Suppl. 234 (2013) 213, arXiv:1210.1383
13. Mai 2012: “Hadronic contribution to  $(g-2)_\mu$  from  $e^+e^-$  annihilations and tau decays” - plenary talk at the workshop “Meson Transition Form Factors” (Cracow, Poland): arXiv:1207.6556
14. March 2012: “Inclusive jet production measured with ATLAS and constraints on PDFs” - talk on behalf of the ATLAS collaboration, in parallel session at the conference DIS 2012 (Bonn, Germany), arXiv:1207.4583
15. January 2011: “Iterative dynamically stabilized method of data unfolding” - plenary talk at the conference “PHYSTAT 2011” (CERN): arXiv:1106.3107. 28 cit.<sup>(7)</sup>
16. September 2010: “Measurement of the  $e^+e^- \rightarrow$  hadrons cross-section at low energy with ISR events at BABAR” - plenary talk at the workshop TAU2010 (Manchester, UK), on behalf of the BABAR collaboration: arXiv:1012.3689
17. March 2010: “Current status of  $g-2$ ” - plenary talk in the EW session, at the conference “Rencontres de Moriond” (la Thuile, Italy), arXiv:1006.4739
18. January 2010: “ISR cross sections in  $e^+e^-$  and implications on muon  $g-2$ ” - plenary talk on behalf of the BABAR collaboration at the workshop HEP2010 (Valparaiso, Chile)
19. July 2008: “Precise  $\alpha(s)$  from Tau Decays” - plenary talk at the conference “QCD Montpellier” arXiv:0809.2823, Nucl.Phys.Proc.Suppl.186:183-186,2009
20. March 2008: “Improved  $\alpha(s)$  from Tau Decays” - plenary talk in the QCD session, at the conference “Rencontres de Moriond” (la Thuile, Italy): arXiv:0805.2825

### **Teaching, supervising and evaluation experience:**

- November 2013 – October 2016: *co-supervisor of a postdoc* working on the differential ttbar cross-section measurement and on the jet energy calibration and resolution
- Since October 2016: *co-supervisor of PhD student* working on the jet energy calibration and resolution, the measurement jet cross-sections and searches of New Physics using jets
- October 2012 – September 2014: *co-supervisor of PhD student* working on the jet energy calibration and resolution, and the measurement of the ttbar cross-section
- March-June 2016 – *supervisor for the internship of a Master 2 student* on the in-situ jet energy calibration
- March-June 2015 – *supervisor for the internship of a Master 2 student* on the fiducial ttbar cross-section measurement
- April-June 2013 – *supervisor for the internship of a Master 2 student* on the energy calibration and the measurement of the energy resolution of jets
- 2011 and 2012 – *Main supervisor for two CERN summer students* working on statistics- and physics-projects
  
- November 2016: *Member of the committee in charge of recruiting a postdoc* in the LHCb group at LPNHE
- September 2014: *Member of the examining committee for one PhD thesis* prepared at LPNHE, France
- September 2013: *Member of the examining committee for one PhD thesis* prepared at CEA, LPTHE and LPNHE, France
  
- 2007-2010 – *Teaching assistant* for second year students at University Paris 11

### **Invited scientific collaborators:**

- October 2016: invited student F. Daneri to LPNHE, for 1 week, work on the jet calibration, supported by a Sorbonne Paris Cité funding
- October 2015: invited scientist P. Loch to LPNHE, for 1 month, work on new methods of jet calibration, supported by a Institut Lagrange Paris (ILP) funding
- October 2015: invited student G. Marceca to LPNHE, for 3 weeks, work on the jet calibration and cross section measurements, supported by a Sorbonne Paris Cité funding

### **Scientific stays in foreign laboratories:**

January 2016: stay at the University of Buenos Aires, for 2.5 weeks, work on the jet calibration and the jet cross section measurements with R. Piegaia and his students J. Bossio and G. Marceca, supported by an EPLANET funding.

### **Outreach activities:**

- March 2018: Cross talk (ATLAS-Theory) on jet cross section measurements, CERN
- March 2018: Guide for a visit of French Parliament Representatives at the ATLAS control room at CERN
- March 2017: Co-editor of the ATLAS Physics Briefing “Particle-hunting at the energy frontier” <https://atlas.cern/updates/physics-briefing/particle-hunting-energy-frontier>
- October 2015 and 2016: Guide for groups of students visiting the exhibition organized during the “Celebration of science” event at LPNHE
- January 2015: Speaker at an interactive meeting at Ecole Polytechnique, aiming at explaining the activity of a researcher for one series of 500 students

**Prizes and distinctions:**

- 2015: Obtained the “PhD supervision and research bonus” from CNRS, for a duration of 4 years, for “exceptional contributions to research”
- 2014: Title of “Distinguished Referee” for the European Physics Journal
- 2001: Bronze Medal at the International Physics Olympiad - Antalya (Turkey)
- 1996-2001: Numerous prizes and distinctions at national (Romania) and international physics competitions