

Marie-Hélène Genest

Researcher for the CNRS at LPSC Grenoble

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Citizenships : Canadian and French

Languages : French (native), English (excellent), Italian (excellent), German (functional), Spanish (basic)

Education and training

- 2007 : PhD in physics from Université de Montréal (Dean's honour list), Canada
- 2007 – 2010 : Post-doctoral researcher for the Excellence Cluster : Origin and Structure of the Universe at the Ludwig-Maximilians-Universität (Munich), Germany
- 2010 – 2011 : Junior PI for the Excellence Cluster : Origin and Structure of the Universe at the Ludwig-Maximilians-Universität (Munich), Germany

Distinctions

CNRS Bronze Medal 2016

Responsibilities within the ATLAS Collaboration

- Co-convener of the Exotics group (October 2017 - October 2019) :
<https://twiki.cern.ch/twiki/bin/view/AtlasPublic/ExoticsPublicResults>
- Co-convener of the "Jets and Dark Matter" exotics group (April 2015 - April 2016)
- Physics validation co-convener (November 2013-March 2015)
- Software coordination for the ATLAS supersymmetry group (March 2012 - April 2013)
- Co-convener of the ATLAS supersymmetry sub-group focusing on final states containing missing transverse energy (Oct. 2010 - Oct. 2011)
- Paper editor, member of various editorial boards and acting as final sign-off for various supersymmetric and exotics analyses
- Member of ATLAS search committees for the nomination of the physics coordinator (2016) and of physics group conveners (2015)

Other responsibilities

- Jury for the selection of a Maitre de Conférence section CNU 29 (2017)
- Member of the LPSC scientific advisory board (since 2016)
- Member of the LPSC thesis monitoring committee (2015-2019)
- Reviewer for Physics Letters B and JHEP
- Member of the steering group for the particle physics thematic WG of the 2020 national prospectives

Activities related to student supervision and teaching

- Supervision of students at LPSC (5 master students and 2 PhD student) and LMU (3 master students and partly supervising 3 PhD students)
- Member of the jury for 4 PhD theses (one as a reviewer) ; reviewer for 4 master theses in Grenoble
- Invited lecturer for the Graduate School "Mass, Spectrum, Symmetry" GRK1504/02, Rathen, Germany, March 13-16th 2017.
- Organisation committee for the the Enigmass classes (Grenoble/Annecy, 2014, 2016, 2017)
- Invited lecturer for the International Conference on High Energy Physics : Standard Model and Beyond, Antalya, Turkey, August 28 - September 8 2012.
- Invited lecturer at the IMPRS/GK Young Scientist Workshop, Ringberg, Germany, July 27-31 2009.
- Teaching assistant at LMU and U. Montréal for various classes (2001-2010 : particle physics, mechanics, astrophysics).

Workshop/conference organisation

- Member of the scientific program committee for the LHCP2020 conference
- Co-cordinator of the BSM section of the IRN Terascale since 2013 (previously GDR Terascale)
- Co-convener of the Higgs and BSM Physics session (WG3) of DIS2019
- Chair of the Axions and Cosmology session at the Rencontres de Moriond Electroweak, March 2019.
- Since June 2018, member of the local organisation of the Les Houches Workshop Series "Physics at TeV Colliders"
- Organisation and chair of the Higgs and New Physics Sessions for EPS-HEP 2017
- Organisation of the workshop Conceptual Issues in Fundamental Physics (June 9th and 13th 2017 at LPSC Grenoble and LAPTh Annecy)
- Member of the scientific organisation committee of the Physics ATLAS France workshop (March 29-31st 2017)
- Local organisation of the ATLAS Beyond the Standard Model Higgs and Exotics Workshop (April 11-15th 2016)
- Local organisation of the workshop GDR Terascale November 23-25th 2015
- Member of the program committee of the workshop (Re)interpreting the results of new physics searches at the LHC (CERN, June 15-17th 2016)
- Convener of the *Background (physics and instrumental)* of the *ATLAS-Deutschland* workshop, Göttingen, Germany, 2011.

Outreach

- Public talk "Des nouvelles d'ATLAS, le titan explorant la physique des particules", Colloquium "Questions de physique" of the Société Française de Physique, Grenoble, November 15th 2018.
- Various interviews (Journal du CNRS, Webdoc on Dark matter (<http://lamatierenoire.fr/nouveautype-de-matiere/>), LPSC 50th anniversary video)
- Public talk on dark matter retransmitted on social networks, Forum du CNRS, Cité universitaire de Paris, November 25 2017.
- Public talk on dark matter for the *Pint of Science* festival, Grenoble, May 17 2017.
- Since 2013, annual organisation at the LPSC Grenoble of the "Hands on Particle Physics - International Masterclasses for High School Students".

- Member of the local organisation committee of Fête de la Science (2013, 2016, 2017).
- Day on "Teaching particle physics" for high school teachers (2015, 2016)
- Public discussion on the movie *Particle Fever*, Chambéry, February 26 2015.
- *BEH! Un boson...* LPSC colloquium, December 19 2014.
- High school talk on particle physics at lycée Marie Reynoard (2014).
- Supersymmetry : LHC search results, LPSC colloquium, December 8th 2011

Seminars, conferences (excluding numerous talks at workshops and posters)

International conferences :

- On behalf of the ATLAS and CMS collaborations, Search for Exotica, on invitation at the plenary session of EPS-HEP2019, Ghent, July 10-17th 2019.
- With P. Meridiani and O. Fischer, Summary of DIS2019 Working Group 3 (Higgs and BSM Physics), DIS2019, Turin, April 8-12th 2019.
- On behalf of the ATLAS and CMS Collaborations, Searching for exotic BSM physics : Extrapolation Until the End of Run-3, 52e Rencontres de Moriond EW, March 18-25th 2017.
- On behalf of the ATLAS and CMS Collaborations, Searches for dark matter and extra dimensions at the LHC, 27th Rencontres de Blois, Blois, France, June 3rd 2015.
- On behalf of the ATLAS Collaboration, Searches for single object and missing transverse energy with the ATLAS detector, SUSY13, Trieste, Italy, August 26th-31st 2013.
- On behalf of the ATLAS Collaboration, Search for Dark Matter Candidate with the ATLAS detector, Roma International Conference on Astroparticle Physics, Rome, May 25 2011.
- On behalf of the ATLAS and CMS Collaborations, Prospects for R-Parity Conserving SUSY searches at the LHC, EPS-HEP 2009, Krakow, July 16 2009.
- Extended LHC Reach in Focus Point Region of the MSSM, 2nd Vienna Central European Seminar on Particle Physics and Quantum Field Theory : Frontiers in Astroparticle Physics, Vienna University, November 26 2005.
- Simulation of the Response of Superheated Droplet Detectors used in the PICASSO experiment, 14th International Conference on Solid State Dosimetry, Yale University, June 30 2004.
- On behalf of the ATLAS Collaboration, Exotic Physics in ATLAS, American Physical Society Congress, Albuquerque, April 20 2002.

Invited seminars :

- Searches for Dark Matter with the ATLAS detector, Seminar at Université de Montréal, Montréal, Canada, June 23rd 2016.
- Searching for Dark Matter with the ATLAS Detector, Seminar at the University of Göttingen, II. Physikalisches Institut, Göttingen, Germany, February 5th 2016.
- Supersymmetry and dark matter at the LHC, Séminaire du LPTMS, Orsay, May 28th 2013.
- Supersymmetry Searches at the LHC, Séminaire du LPNHE, Paris, May 16th 2013.
- Supersymmetry Searches at the LHC, Séminaires de Physique des Hautes Énergies à Montréal, Université de Montréal, April 22nd 2013.
- Searches for supersymmetry with the ATLAS detector, Universität Bonn, July 14 2011.
- À la recherche de la matière noire avec PICASSO et ATLAS, Institut de Physique Nucléaire de Lyon, February 23 2010.
- Prospects for Supersymmetry Searches with ATLAS at the LHC, Maier-Leibnitz-Laboratorium Colloquium, Garching, Germany, July 17 2008.

Publications

The complete list of my publications : <http://inspirehep.net/author/profile/M.H.Genest.1>

A short list of selected publications :

- ATLAS Collaboration, Constraints on mediator-based dark matter and scalar dark energy models using $\sqrt{s} = 13$ TeV pp collision data collected by the ATLAS detector, JHEP 05 (2019) 142.
- X. Cid Vidal et al., Beyond the Standard Model Physics at the HL-LHC and HE-LHC, <https://arxiv.org/abs/1812.07831>
- T. Abe et al, LHC Dark Matter Working Group : Next-generation spin-0 dark matter models, arXiv :1810.09420
- ATLAS Collaboration, Search for dark matter at $\sqrt{s}=13$ TeV in final states containing an energetic photon and large missing transverse momentum with the ATLAS detector, Eur. Phys. J. C 77 (2017) 393
- ATLAS Collaboration, Search for new phenomena in events with a photon and missing transverse momentum in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector, JHEP 1606 (2016) 059
- ATLAS Collaboration, Search for squarks and gluinos in events with isolated leptons, jets and missing transverse momentum at $\sqrt{s} = 8$ TeV with the ATLAS detector, JHEP04(2015)116
- ATLAS Collaboration, Search for new phenomena in events with a photon and missing transverse momentum in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector, Phys. Rev. D 91, 012008 (2015)
- D. Abercrombie et al., Dark Matter Benchmark Models for Early LHC Run-2 Searches : Report of the ATLAS/CMS Dark Matter Forum, Phys. Dark Univ. 26 (2019) 100371
- J. Abdallah et al., Simplified Models for Dark Matter Searches at the LHC, Phys. Dark Univ. 9-10 (2015) 8-23, arXiv :1506.03116.
- ATLAS Collaboration, Further search for supersymmetry at $\sqrt{s} = 7$ TeV in final states with jets, missing transverse momentum and isolated leptons with the ATLAS detector, Phys. Rev. D 86 092002 (2012)
- ATLAS Collaboration, Search for supersymmetry using final states with one lepton, jets, and missing transverse momentum with the ATLAS detector in $\sqrt{s} = 7$ TeV pp, Phys. Rev. Lett. 106 :131802 (2011)
- Archambault, S. et al., Dark Matter Spin-Dependent Limits for WIMP Interactions on F-19 by PICASSO, Phys. Lett. B 682, pp. 185-192 (2009)
- Aubin, F. et al., Discrimination of nuclear recoils from alpha particles with superheated liquids, New J. Phys. 10 (2008)
- Barnabé-Heider, M. et al., Response of superheated droplet detectors of the picasso dark matter search experiment, Nucl. Instrum. Meth. A 555 (2005) 184
- Barnabé-Heider, M. et al., Improved spin dependent limits from the PICASSO dark matter search experiment, Phys. Lett. B 624 (2005) 186.
- A. Belyaev, M. H. Genest, C. Leroy and R. Mehdiyev, Signals from R parity violating top quark decays at LHC, JHEP 0409 (2004) 012