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Research and work experience

- 2019 – present  **Post-doctoral researcher.** Gerda/LEGEND experiments, *Max-Planck-Institut für Physik*, Munich, Germany.
- Data analysis with GERDA data
 - Characterization and optimization of PEN as self-vetoing structural material for LEGEND detector.
- 2018 – 2019  **Teaching assistant.** *Institut Villebon Georges Charpak and Université Paris Sud*, Orsay – France.
- 2017 – 2019  **Post-doctoral researcher.** SoLid experiment, *Laboratoire de l'Accélérateur Linéaire (LAL)*, Univ Paris-Sud, CNRS/IN2P3, Université Paris-Saclay, Orsay, France.
- Quality assurance coordinator during detector construction
 - Run and calibration coordinator after commissioning
 - IBD signal + BiPo background analysis
- 2013 – 2017  **PhD Student.** STEREO experiment, *Laboratoire d'Annecy de Physique des Particules (LAPP)*, Université Savoie Mont Blanc, Université Grenoble Alpes, Annecy – France.
- Development of the source calibration system of the STEREO experiment and search for sterile neutrinos at the ILL.
- 2014 – 2016  **Teaching assistant.** *IUT Université Savoie Mont Blanc*, Annecy – France.
- 2013 – 2013  **Internship.** STEREO experiment, *Laboratoire d'Annecy de Physique des Particules (LAPP)*, Annecy – France.
- 2012 – 2012  **Research assistant.** *Instituto Nacional de Meteorología e Hidrología – Inamhi*, Quito – Ecuador.
- 2010 – 2012  **Research assistant.** *Instituto Geofísico, Escuela Politécnica Nacional*, Quito – Ecuador.
- 2009 – 2010  **Laboratory assistant.** Physics Department, *Escuela Politécnica Nacional*, Quito – Ecuador.

Education

- 2013 – 2016  **Ph.D. in Particle and Astroparticle Physics**, *Laboratoire d'Annecy de Physique des Particules (LAPP)*, Université Grenoble Alpes, Annecy, France.
Supervisors: Pablo del Amo Sanchez and Dominique Duchesneau
- 2012 – 2013  **M.Sc. in Particle Physics**, *Université Blaise Pascal – Université Clermont Auvergne*, Clermont-Ferrand, France.
- 2005 – 2011  **B.Sc. in Physics**, *Escuela Politécnica Nacional*, Quito, Ecuador.

Publications

Journal Articles

- 1 Abreu, Y. et al. (2019a). Commissioning and Operation of the Readout System for the SoLid Neutrino Detector. *JINST*, *14*(11), P11003. doi:10.1088/1748-0221/14/11/P11003. arXiv: 1812.05425 [physics.ins-det]

- 2 Abreu, Y. et al. (2019b). Development of a Quality Assurance Process for the SoLid Experiment. *JINST*, 14(02), P02014. doi:<https://doi.org/10.1088/1748-0221/14/02/P02014>. arXiv: 1811.05244 [physics.ins-det]
- 3 Cabrera, A. et al. (2019). Neutrino Physics with an Opaque Detector. *Submitted to NCP*. arXiv: 1908.02859 [physics.ins-det]
- 4 Abreu, Y. et al. (2018a). Optimisation of the scintillation light collection and uniformity for the SoLid experiment. *JINST*, 13(09), P09005. doi:10.1088/1748-0221/13/09/P09005. arXiv: 1806.02461 [physics.ins-det]
- 5 Abreu, Y. et al. (2018b). Performance of a full scale prototype detector at the BR2 reactor for the SoLid experiment. *JINST*, 13(05), P05005. doi:10.1088/1748-0221/13/05/P05005. arXiv: 1802.02884 [physics.ins-det]
- 6 Allemandou, N. et al. (2018). The STEREO Experiment. *JINST*, 13(07), 07. doi:10.1088/1748-0221/13/07/P07009. arXiv: 1804.09052 [physics.ins-det]
- 7 Almazán, H. et al. (2018). Sterile Neutrino Constraints from the STEREO Experiment with 66 Days of Reactor-On Data. *Phys. Rev. Lett.* 121(16), 161801. doi:10.1103/PhysRevLett.121.161801. arXiv: 1806.02096 [hep-ex]

Conference Proceedings

- 1 **Manzanillas, L.** (2020). Status of the SoLid experiment: Search for sterile neutrinos at the SCK-CEN BR2 reactor. In *Proceedings, 15th International Conference on Topics in Astroparticle and Underground Physics (TAUP 2017): Sudbury, Ontario, Canada, July 24-28, 2017* (Vol. 1342, 1, p. 012034). doi:10.1088/1742-6596/1342/1/012034. arXiv: 1710.07933 [physics.ins-det]
- 2 Almazán, H. et al. (2019). Search for light sterile neutrinos with the STEREO experiment. In *Proceedings, International Workshop on Particle Physics at Neutron Sources 2018 (PPNS 2018): Grenoble, France, May 24-26, 2018* (Vol. 219, p. 08001). doi:10.1051/epjconf/201921908001
- 3 **Manzanillas, L.** (2019a). Calibration of the highly segmented SoLid antineutrino detector. In *European Physical Society Conference on High Energy Physics - EPS-HEP2019, 10-17 July, 2019 Ghent, Belgium*. arXiv: 1910.12825 [physics.ins-det]
- 4 **Manzanillas, L.** (2019b). Performance of the SoLid Reactor Neutrino Detector. In *European Physical Society Conference on High Energy Physics - EPS-HEP2019, 10-17 July, 2019 Ghent, Belgium*. arXiv: 1910.12842 [physics.ins-det]
- 5 **Manzanillas, L.** (2019c). Performance of the SoLid Reactor Neutrino Detector. In *Proceedings, 39th International Conference on High Energy Physics (ICHEP2018): Seoul, Korea, July 4-11, 2018* (Vol. ICHEP2018, p. 426). doi:10.22323/1.340.0426. arXiv: 1811.05694 [physics.ins-det]
- 6 **Manzanillas, L.** (2018a). Calibration and energy scale in solid. In *Proceedings, Energy Scale Calibration in Antineutrino Precision Experiments ESCAPE 2018: Heidelberg, Germany, June 1-2, 2018*. doi:10.5281/zenodo.1314400
- 7 **Manzanillas, L.** (2018b). Calibration and quality assurance of the SoLid detector. In *Proceedings, NEUTRINO 2018: Heidelberg, Germany, June 4-9, 2018*. doi:10.5281/zenodo.1300477
- 8 **Manzanillas, L.** (2017). STEREO: Search for sterile neutrinos at the ILL. In *Proceedings, Neutrino Oscillation Workshop (NOW 2016): Otranto (Lecce), Italy, September 4-11, 2016* (Vol. NOW2016, p. 033). arXiv: 1702.02498

Invited conferences and seminars

- July - 2019: ■ Talk in parallel session, Performance of the SoLid reactor neutrino detector, European Physical Society Conference on High Energy Physics 2019 (**EPS-HEP2019**), Ghent, Belgium.
- Poster, Calibration of the highly segmented SoLid antineutrino detector, European Physical Society Conference on High Energy Physics 2019 (**EPS-HEP2019**), Ghent, Belgium.
- July - 2018: ■ Talk in parallel session, Performance of the SoLid reactor neutrino detector, XXXIX International Conference on High Energy Physics (**ICHEP-2018**), COEX - Seoul, South Korea.
- June - 2018: ■ Talk, Performance of the SoLid Reactor Neutrino Detector, **GDR neutrino**, APC, Paris, France.
- Talk, Highlights from NEUTRINO-2018 conference, **GDR neutrino**, APC, Paris, France.
- Poster, Calibration and quality assurance of the SoLid detector, XXVIII International Conference on Neutrino Physics and Astrophysics (**NEUTRINO-2018**), Heidelberg, Germany.
- Talk, Calibration and Energy Scale in Solid, Energy Scale Calibration in Antineutrino Precision Experiments (**ESCAPE 2018**), Heidelberg, Germany.
- May - 2018: ■ Seminar, Status of the SoLid experiment: Search for sterile neutrinos, LPSC, Grenoble, France.
- February - 2018: ■ Seminar, The SoLid experiment: Search for sterile neutrinos at the SCK • CEN BR2 reactor, CPPM, Marseille, France.
- July - 2017: ■ Talk in parallel session, Status of the SoLid experiment, Topics in Astroparticle and Underground Physics (**TAUP2017**), Sudbury ON, Canada.
- January - 2017: ■ Seminar, Search for sterile neutrinos at nuclear reactors, Escuela Politécnica Nacional, Quito, Ecuador.
- December - 2016: ■ Seminar, Search for sterile neutrinos at nuclear reactors, Universidad San Francisco de Quito, Quito, Ecuador.
- November - 2016: ■ Seminar, Search for sterile neutrinos at nuclear reactors, Observatorio Astronómico de Quito, Quito, Ecuador.
- September - 2016: ■ Talk in parallel session, The STEREO experiment: Search for sterile neutrinos at the ILL, Parallel session, Neutrino Oscillation Workshop (**NOW2016**), Lecce, Italy.
- June - 2016: ■ Talk, Status of the STEREO experiment, **GDR neutrino**, Grenoble, France.
- November - 2015: ■ Talk, Development of the source calibration system of the STEREO experiment, Journées de Rencontre des Jeunes Chercheurs, Chedigny, France.
- March - 2015: ■ Poster, The STEREO experiment, The 2015 CERN - Latin-American School of High-Energy Physics, Ibarra, Ecuador.
- October - 2011: ■ Talk, Analysis of chugging signals at the El Reventador volcano, 7th Conference of Earth Sciences, Quito - Ecuador.

Skills



- Languages ■ English (fluent), French (fluent), German (basic), Spanish (Mother tongue).
- Coding ■ C++, Julia, ROOT, Geant4, BASH, PERL, CRONTAB.
- Operating systems: ■ Linux flavors.
- Statistical Packages: ■ RooFit, R.

Skills (continued)



Applications:  L^AT_EX, Matlab, Mathematica.

References



Dr Mathieu Bongrand

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Academic Supervision and Miscellaneous Experience



Students supervision

- 2019  **Master I student supervisor**, Cassandre Contre, Master I internship in SoLid at LAL (2 months), *Univ. Paris Sud*.
- 2018–2019  **PhD student co-supervisor (33%)**, Noe Roy, SoLid PhD student (2018–2021), LAL, *Univ. Paris Sud*.
- 2018  **PhD student final analysis co-supervisor (30%)**, Delphine Boursette, SuperNemo and SoLid PhD student (2015–2018), LAL, *Univ. Paris Sud*.
-  **Master II student co-supervisor (50%)**, Noe Roy, Master II internship in SoLid at LAL (4 months), *Univ. Paris Sud*.
-  **Master II students detector project supervisor**, Manar Amer and Shayma Hossein, NPAC, *Univ. Paris Sud*.
-  **Master I student supervisor**, Serhii Liaskovets, Master I internship at LAL (3 months), *National Taras Shevchenko University of Kyiv*.
- 2017  **Master I student supervisor**, Oleg Cherpak, Master I internship at LAL (3 months), *National Taras Shevchenko University of Kyiv*.

Responsibilities


- 2017–2019  **Run coordinator**, SoLid experiment.
- 2018–2019  **Calibration coordinator**, SoLid experiment.
-  **Organizer and host** of two SoLid analysis workshops, LAL.
- 2017–2018  **Quality assurance coordinator**, SoLid experiment.
- 2009  **General secretary**, Association of physics students of the *Escuela Politécnica Nacional*.

Science dissemination


- 2016  **Presenter**, Stand Neutrino, *Journées Portes Ouvertes, Fête de la Science, LAPP*.
- 2014  **Presenter**, Stand Neutrino, *Journées Portes Ouvertes, Fête de la Science, LAPP*.

Academic Supervision and Miscellaneous Experience (continued)

Awards and Achievements

2012  **SENESCYT scholarship holder**, *Secretaría Nacional de Educación Superior Ciencia y Tecnología*, Quito - Ecuador, 2012-2013.

Interests

 Marathon running, trail and ultratrail running, climbing, alpine hiking.