

Dr. Simon Fiorucci

French citizen, permanent US resident
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Current Situation (2015 +)

- Assistant Research Professor, Brown University Physics Department, Astro-Particles group
- LUX Dark Matter Experiment – Commissioning Director & Science Coordination Manager
- LZ Dark Matter Experiment – Simulations Coordinator, Veto system PMT L3
- LUX Executive Council member and LZ Technical Board member

Previous Experience

2011 – 2014	Senior Research Associate at Brown University, working on LUX and LZ
2007 – 2010	Post-doctoral fellow at Brown University, working on LUX (RI and SD, USA)
2005 – 2007	Post-doctoral fellow at Brown University, working on XENON10 at LNGS (Italy)
2002 – 2005	Graduate student at CEA Saclay DAPNIA, working on EDELWEISS I (France)
2001 – 2002	Masters student with CEA/CSNSM/University Lyon-I, working on EDELWEISS I (France)
2001	3-month internship at SAGEM-REOSC, working on LIBRIS satellite pre-project (France)

Education

2002 – 2005	Ph.D. in Physics, Université Paris-XI Orsay and CEA Saclay
2001 – 2002	Masters Degree in Condensed Matter Physics, Université Lyon-I
1999 – 2002	Engineering Degree, Applied Physics major, Ecole Centrale de Lyon
1997 – 1999	Prep School for “Grandes Ecoles”, Physics-Chemistry major, Lycée Marcellin Berthelot

Skills

Languages	French (native), English (fluent), Italian (basic)
Physics	Particle physics, Cosmology, Condensed matter Specialist in Low backgrounds & Radioactivity, Data acquisition, Noble liquids, Cryogenic systems, Photodetectors
Engineering	Broad education in Mechanics, Materials, Electronics, Optics, Chemistry
Computing	Windows, Linux, OSX environments (in that order). Hardware/networks proficiency Coding: Matlab, Labview, PAW, notions of C++ and python
Management	Extensive project management experience as part of LUX and LZ duties since 2009

For more details on scientific work, publications and links to other related information, please visit www.simonfiorucci.com

Colloquia and Seminars

- 2015-03-16: organizing committee and speaker at the G2 DM radiopurity workshop, PNNL
- 2014-05-01: Invited seminar speaker at Boston University - LUX overview
- 2014-04-11: Invited colloquium speaker at CEA Saclay - LUX overview
- 2013-11-01 : Invited seminar speaker at FNAL Wine & Cheese - First LUX Science Results
- 2012-10-10 : Invited seminar speaker at Harvard - LUX/LZ Science update
- 2012-09-19 : Invited colloquium speaker at U Mass Lowell - LUX/LZ outreach
- 2011-04-15 : Advisory committee and speaker at the DUSEL Workshop on Cosmogenic Backgrounds, LBL
- 2011-03-17 : Invited seminar speaker at South Dakota School of Mines and technology - LUX/LZ outreach

List of Publications

2014

- *Radiogenic and Muon-Induced Backgrounds in the LUX Dark Matter Detector*, *Astropart. Phys.* 62 33-46 (2015), [arXiv:1403.1299](https://arxiv.org/abs/1403.1299) ^[1]

2013

- *First results from the LUX dark matter experiment at the Sanford Underground Research Facility*, *Phys. Rev. Lett.* 112, 091303. Preprint: [arXiv:1310.8214](https://arxiv.org/abs/1310.8214) ^[2]
- *Dark Matter Search Backgrounds from Primordial Radionuclide Chain Disequilibrium*, Submitted to *AstroPart. Phys.* Preprint: [arXiv:1305.5183](https://arxiv.org/abs/1305.5183) ^[3]

2012

- *The Large Underground (LUX) Experiment*. *Nucl.Instr.Meth.A704*:111-126,2013. Preprint: [arXiv:1211.3788](https://arxiv.org/abs/1211.3788) ^[4]
- *Technical Results from the Surface Run of the LUX Dark Matter Experiment*. *Astropart. Phys.* 45 (2013) pp 34-43. Preprint: [arXiv:1210.4569](https://arxiv.org/abs/1210.4569) ^[5]
- *The LUX Prototype Detector*. *Nucl.Instr.Meth.A709*:29-36, 2013. Preprint: [arXiv:1207.3665](https://arxiv.org/abs/1207.3665) ^[6]
- *An Ultra-Low Background PMT for Liquid Xenon Detectors*. *Nucl.Instrum.Meth.A10.1016/j.nima.2012.11.020* Preprint: [arXiv:1205.2272](https://arxiv.org/abs/1205.2272) ^[7]

2011

- *Radio-assay of Titanium samples for the LUX Experiment*. Preprint: [arXiv:1112.1376v3](https://arxiv.org/abs/1112.1376v3) ^[8]
- *LUXSim: A Component-Centric Approach to Low-Background Simulations*. *Nucl.Instrum.Meth.A675*:63,2012. Preprint: [arXiv:1111.2074v1](https://arxiv.org/abs/1111.2074v1) ^[9]
- *Data Acquisition and Readout System for the LUX Dark Matter Experiment*. *Nucl.Instrum.Meth.A668*:1,2012. Preprint: [arXiv:1108.1836v2](https://arxiv.org/abs/1108.1836v2) ^[10]
- *A search for light dark matter in XENON10 data*. *Phys.Rev.Lett.*107,051301,2011. Preprint: [arXiv:1104.3088v3](https://arxiv.org/abs/1104.3088v3) ^[11]

2010

- *Design and Performance of the XENON10 Dark Matter Experiment*. *Astropart.Phys.*34:679-698,2011. Preprint: [arXiv:1001.2834v1](https://arxiv.org/abs/1001.2834v1) ^[12]

2009

- *Constraints on inelastic dark matter from XENON10*. *Phys.Rev.D*80:115005,2009. Preprint: [arXiv:0910.3698v3](https://arxiv.org/abs/0910.3698v3) ^[13]

2008

- *The scintillation and ionization yield of liquid xenon for nuclear recoils*. *Nucl.Instrum.Meth.A*601:339-346,2009. Preprint: [arXiv:0807.0459v2](https://arxiv.org/abs/0807.0459v2) ^[14]
- *Limits on spin-dependent WIMP-nucleon cross-sections from the XENON10 experiment*. *Phys.Rev.Lett.*101:091301,2008. Preprint: [arXiv:0805.2939v2](https://arxiv.org/abs/0805.2939v2) ^[15]

2007

- *First Results from the XENON10 Dark Matter Experiment at the Gran Sasso National Laboratory*. *Phys.Rev.Lett.*100:021303,2008. Preprint: [arXiv:0706.0039v2](https://arxiv.org/abs/0706.0039v2) ^[16]
- *Identification of backgrounds in the EDELWEISS-I dark matter search experiment*. *Astropart.Phys.*28:143-153,2007. Preprint: [arXiv:astro-ph/0610821v2](https://arxiv.org/abs/astro-ph/0610821v2) ^[17]

2006

- *Measurement of the response of heat-and-ionization germanium detectors to nuclear recoils*. *Nucl.Instrum.Meth.A*577:558-568,2007. Preprint: [arXiv:astro-ph/0607502v1](https://arxiv.org/abs/astro-ph/0607502v1) ^[18]

2005

- *Final results of the EDELWEISS-I dark matter search with cryogenic heat-and-ionization Ge detectors*. *Phys.Rev.D*71:122002,2005. Preprint: [arXiv:astro-ph/0503265v3](https://arxiv.org/abs/astro-ph/0503265v3) ^[19]
- *Sensitivity of the EDELWEISS WIMP search to spin-dependent interactions*. *Phys.Lett.B*616:25-30,2005. Preprint: [arXiv:astro-ph/0412061v2](https://arxiv.org/abs/astro-ph/0412061v2) ^[20]

Conference Proceedings

- *The LUX Dark Matter Search — Status Update*. Proceedings of the Sixth Large TPCs Symposium, Paris, December 2012. [arXiv:1301.6942](https://arxiv.org/abs/1301.6942) ^[21]
- *The LUX experiment at Sanford Lab*. Poster at the Neutrino2012 conference (no associated paper).
- *Status of the LUX Dark Matter Search*. Proceedings of the SUSY09 conference. Preprint: [arXiv:0912.0482v1](https://arxiv.org/abs/0912.0482v1) ^[22]
- *Radon as a Source of External Background at Homestake Mine*. Proceedings of the 2009 APS meeting. Preprint: [adsabs:2009APS..APRW12009T](https://arxiv.org/abs/adsabs:2009APS..APRW12009T) ^[23]
- *Xenon10 and Noble Liquids Dark Matter Detectors*. Proceedings of the LTD-12 conference (Poster). *J.Low Temp Phys* 151:812-817,2008. Preprint: [LTD12 website](https://arxiv.org/abs/LTD12_website) ^[24]
- *Cryogenic germanium bolometers: Alpha surface events rejection capabilities*. Proceedings of the LTD11 conference (Poster). *Nucl.Instrum.Meth.A*559,2006.
- *Development of Ge/NbSi detectors for EDELWEISS-II with identification of near-surface events*. Proceedings of the LTD11 conference (Poster). *Nucl.Instrum.Meth.A*559:393-395,2006. Preprint: [adsabs:2006NIMPA.559..393E](https://arxiv.org/abs/adsabs:2006NIMPA.559..393E) ^[25]
- *Direct Non-baryonic Dark Matter Search – An experimental Review*. Proceedings of the 2004 Moriond conference on Electroweak Interactions and Unified Theories. Preprint: [arXiv:astro-ph/0406285v1](https://arxiv.org/abs/astro-ph/0406285v1) ^[26]

- *Digital Acquisition System for the Edelweiss Experiment*. Proceedings of the LTD-10 conference (Poster). NIM-A 520:584-587,2004. Preprint: [adsabs:2004NIMPA.520..584C](http://adsabs.harvard.edu/abs/2004NIMPA.520..584C) ^[27]
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- [1] arXiv:1403.1299: <http://arxiv.org/abs/1403.1299>
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- [3] arXiv:1305.5183: <http://arxiv.org/pdf/1305.5183>
- [4] arXiv:1211.3788: <http://arxiv.org/abs/1211.3788>
- [5] arXiv:1210.4569: <http://arxiv.org/abs/1210.4569>
- [6] arXiv:1207.3665: <http://arxiv.org/abs/1207.3665>
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- [12] arXiv:1001.2834v1: <http://arxiv.org/abs/1001.2834v1>
- [13] arXiv:0910.3698v3: <http://arxiv.org/abs/0910.3698v3>
- [14] arXiv:0807.0459v2: <http://arxiv.org/abs/0807.0459v2>
- [15] arXiv:0805.2939v2: <http://arxiv.org/abs/0805.2939v2>
- [16] arXiv:0706.0039v2: <http://arxiv.org/abs/0706.0039v2>
- [17] arXiv:astro-ph/0610821v2: <http://arxiv.org/abs/astro-ph/0610821v2>
- [18] arXiv:astro-ph/0607502v1: <http://arxiv.org/abs/astro-ph/0607502v1>
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- [22] arXiv:0912.0482v1: <http://arxiv.org/abs/0912.0482v1>
- [23] adsabs:2009APS..APRW12009T: <http://adsabs.harvard.edu/abs/2009APS..APRW12009T>
- [24] LTD12 website: http://ltd12.grenoble.cnrs.fr/Presentations/Files/R04_preprint.pdf
- [25] adsabs:2006NIMPA.559..393E: <http://adsabs.harvard.edu/abs/2006NIMPA.559..393E>
- [26] arXiv:astro-ph/0406285v1: <http://arxiv.org/abs/astro-ph/0406285v1>
- [27] adsabs:2004NIMPA.520..584C: <http://adsabs.harvard.edu/abs/2004NIMPA.520..584C>