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IRFU – DPhP scientist staff position call
LIST OF PUBLICATIONS AND INTERNAL NOTES

1. Main personal contributionsi. ARTICLES**2016**

- I.G Irastorza et al., *Gaseous time projection chambers for rare event detection: Results from the T-REX project. I. Double beta decay*, JCAP01(2016)033, arXiv:1512.07926.

2014

- NEXT Collaboration et al., *Description and commissioning of NEXT-MM prototype: first results from operation in a Xenon-Trimethylamine gas mixture*, Journal of Instrumentation (JINST) **9** (2014) P03010.

2013

- S. Cebrian et al., *Pattern recognition of ^{136}Xe double beta decay events and background discrimination in a high pressure Xenon TPC*, Journal of Physics G: Nuclear and Particle Physics, **40**, (2013), 125203.

ii. PROCEEDINGS

- Segui L et al. "A Micromegas Based Neutron Detector for the ESS Beam Loss Monitoring", Proc. 7th International Beam Instrumentation Conference (IBIC'18), Shanghai, China, 9-13 September 2018, paper TUPA02, pages 211—214.
- Segui L. for the SNO+ Collaboration "*Background rejection Techniques in the SNO+ Experiment*", AIP Conf. Proc. 1672, 110002 (2015).
- Segui L. et al, "*Pattern recognition of Xe-136 double beta decay signal in a High Pressure Xe gaseous TPC*", 3rd International Conference on MicroPattern Gaseous Detectors (MPGD) contribution to be published in JINST.
- Segui, L. (on behalf of NEXT Collaboration), *NEXT Prototypes based on Micromegas*, NIM A: Accelerators, Spectrometers, Detectors and Associated Equipment (2013), Volume **718**, Pages 434-436,

iii. INTERNAL NOTES**2017**

- nBLM Project – Critical Design Review 1.2 (final), February 2019, CEA
- nBLM Project – Critical Design Review 1.1, December 2017, ESS

- nBLM Project – Preliminary Design Review 1.2, July 2017, ESS
- MonteCarlo Results: nBLM response to ESS scenarios, May 2017, ESS
- Technical Note: Gas Pipes Specifications for nBLM system, March 2017, ESS

2016

- nBLM Project – Preliminary Design Review 1.1, December 2016, ESS
- SNO+, “Alternative Cavity Liner Tests”, Jack Dunger, Jeff Lidgard, Armin Reichold, Laura Segui, February 2016

2015

- SNO+, “A Summary document about the use of Perylene as secondary wavelength shifter in Te-loaded phase”, E. Arushanova, I. Coulter, J. Dunger, B. Land, V. Lozza, A. Mastbaum, L. Segui, J. Wilson, November 2015
- SNO+, Scintillator model: comparison between new data and old model, L. Segui, March 2015

2014

- SNO+, “Mistagging external backgrounds in alphas energy windows”, L. Segui October 2014
- SNO+, “Scintillator optics in model”, L. Segui, May 2014
- SNO+, “Background Rejection using likelihood analysis based on timing differences”, March 2014
 - External and internal contributions

2013

- SNO+, “New WLS: Perylene”, L. Segui, August 2013

iv. CONFERENCES and WORKSHOPS

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| May 2019 | 6th International Conference on Micro Pattern Gaseous Detectors (MPGD19), La Rochelle, France
Talk: “Micromegas for beam loss monitoring” |
| Sept. 2018 | 7th International Beam Instrumentation Conference (IBIC'18), Shanghai, China
Poster: “A Micromegas Based Neutron Detector for the ESS Beam Loss Monitoring” |
| Oct. 2017 | Journées Accélérateurs 2017, Roscoff (France)
Talk: “Un nouveau détecteur pour contrôler les pertes d'énergie dans les accélérateurs” |
| Sept. 2016 | 14th Topical Seminar on Innovative Particle and Radiation Detectors (IPRD16), Siena (Italy).
Talk: “A new concept for beam loss monitoring based on fast neutron detection with a Micromegas readout” |

- May 2016 28th Rencontres de Blois, Blois (France)
Talk: "The SNO+ Experiment: status and future prospects"
- April 2015 IoP, Manchester
Talk: "Scintillator purification and development in the SNO+ Experiment"
- March 2015 Low Radioactivity Techniques (LRT), Seattle, Washington (USA)
Talk "Background rejection Techniques in the SNO+ Experiment"
- July 2014 37th International Conference on High Energy Physics (ICHEP), Valencia (Spain)
Poster: "The SNO+ Experiment"
- July 2013 3rd International Conference on MicroPattern Gaseous Detectors, Zaragoza (Spain)
Poster: "*Pattern recognition of Xe-136 double beta decay signal in a High Pressure Xe gaseous TPC*"
- Sept. 2012 2nd European Nuclear Physics Conference. Bucharest (Romania),
Talk: "*The NEXT Experiment. Neutrino experiment with a Xenon TPC*"
- May 2012 12th Pisa Meeting on Advanced Detectors, Frontier Detectors for Frontier Physics Elba Island (Italy)
Poster : "*NEXT prototype based on Micromegas detector*"
- Dec. 2011 Workshop IRFU MicroPattern Gaseous Detectors,CEA/Saclay, Paris (France)
Talk: "*New Developments with microbulk micromegas. Charge and light readout*"
- Dec. 2011 Workshop IRFU MicroPattern Gaseous Detectors, CEA/Saclay, Paris (France)
Talk: "*R&D with Micromegas for low background applications: the T-REX project*"
- Sept. 2011 XXXIII Reunión Bienal de la Real Sociedad Española de Física, Santander (Spain),
Talk: "*Study of the diffusion and the radioactive background in a $0\nu\beta\beta$ experiment with Xe-136 gas*"
- Feb. 2011 XXXIX International Meeting on Fundamental Physics (IMFP 2011), Canfranc (Spain)
Poster: "*NEXT1-MM Prototype in the NEXT Experiment: Micromegas readout for the search of neutrino mass*".
- Nov. 2010 IV Aragon Young Researchers, University of Zaragoza
Poster: "*NEXT Experiment: Searching the neutrino*"
- Dec.2008 III Aragon Young Researchers, University of Zaragoza
Poster: "*Double beta decay: NEXT Project*"

v. INVITED SEMINARS

- June. 2017 “Micromegas for neutron Detection. Some of the activities at DEDIP/IRFU CEA-Saclay group”
“Séminaires scientifiques du Neutrons”, LMDN, IRSN, Cadarache, France
- May. 2016 “Neutrinoless double beta decay in SNO+”
Instrumentation Seminars, IRFU, CEA/Saclay (France).
- May. 2016 “SNO+ Experiment: Looking fo neutrinos”
Laboratoire Astroparticule et Cosmology (APC), Paris (France).
- May. 2014 “Description and commissioning of NEXT-MM prototype: first results from operation in a Xe-TMA gas mixture”
SNOLAB Journal Club, Sudbury (Canada)
- Dec. 2012 “*Background studies and commissioning of a time projection chamber prototype with Micromegas readout for the Xe-136 double beta decay*”
CENPA Seminar, University of Washington, Seattle (EEUU).

2. General contributioni. ARTICLES**2018**

- SNO+ Collaboration, “*Search for invisible modes of nucleon decay in water with the SNO+ detector*”, Phys. Rev. D **99**, pages 032008, 2019.

2016

- I.G Irastorza et al., “*Gaseous time projection chambers for rare event detection: Results from the T-REX project. II. Dark matter*”, JCAP01(2016)034, arXiv:1512.06294.
- SNO+ Collaboration, “*Current Status and Future Prospects of the SNO+ Experiment*,” Advances in High Energy Physics, vol. 2016, Article ID 6194250, 21 pages, 2016. doi:10.1155/2016/6194250.

2015

- NEXT Collaboration et al., *Accurate gamma and MeV-electron track reconstruction with an ultra-low diffusion Xenon/TMA TPC at 10 atmospheres*, Nuclear Instruments and Methods in Physics Research Section A, **804**, 8-24, 2015

2014

- NEXT Collaboration et al., *Characterisation of NEXT-DEMO using xenon Ka X-rays*, Journal of Instrumentation (JINST) **9** (2014) 10, P10007.
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- S. Cebrian et al., *Low background X-ray detection with Micromegas for axion search*, Journal of Instrumentation (JINST) **9** (2014) 01, P01001.

2013

- S. Cebrián et al., *Micromegas-TPC operation at high pressure in xenon-trimethylamine mixtures*, JINST, **8**, P01012 (2013).
- NEXT Collaboration et al., *Initial results of NEXT-DEMO, a large-scale prototype of the NEXT-100 experiment*, JINST **8** P04002, (2013).
- NEXT Collaboration et al., *Near-Intrinsic Energy Resolution for 30 to 662 keV Gamma Rays in a High Pressure Xenon Electroluminescent TPC*, Nuclear Instrument and Methods, **A708**, 101-114 (2013).

2012

- NEXT Collaboration et al., *Radiopurity control in the NEXT-100 double beta decay experiment: procedures and initial measurements*, JINST, **8**, T01002 (2013).
- NEXT Collaboration et al., *Ionization and scintillation response of high-pressure xenon gas to alpha particles*, JINST **8** (2013) P05025.
- Tomas, A. et al, *CAST microbulk micromegas in the Canfranc Underground Laboratory*, arXiv.1208.5690 (2012).
- NEXT Collaboration et al, *NEXT-100 Technical Design Report (TDR): Executive Summary*, JINST **7** (2012) T06001.
- NEXT Collaboration et al., *SiPMs coated with TPB: coating protocol and characterization for NEXT*, JINST **7** (2012) P02010.

2011

- NEXT Collaboration et al., *The NEXT-100 experiment for neutrinoless double beta decay searches (Conceptual Design Report)*, arXiv:1106.3630 (2011).
- S. Cebrian et al, *Radiopurity of Micromegas readout planes*, Astropart. Phys. **34** (2011) 354-359

2010

- S. Cebrian et al. *Micromegas readouts for double beta decay searches* JCAP 1010:010 (2010)

ii. PROCEEDINGS

- J. Marroncle, A. Delbart, D. Desforge, C.L.H. Lahonde-Hamdoun, Ph. Legou, T. Papaevangelou, L. Segui, G. Tsileidakis, "A New Beam Loss Monitor Concept Based on Fast Neutron Detection and Very Low Photon Sensitivity", JACoW, February 2017
- Segui L. et al., *Study of the diffusion and the radioactive background in a $0\nu\beta\beta$ experiment with Xe-136 gas* (Estudio de la difusión y del fondo radioactivo en un experimento $\beta\beta 0\nu$ en Xe-136"), Libro de Resúmenes de XXXIII Reunión Bienal y 19º Encuentro Ibérico de Enseñanza de la Física.