

# Dr. Dmitry CHERNYAK

## Curriculum Vitae

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### Current position

#### Postdoctoral Researcher

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### Joint affiliation

#### Junior Scientific Researcher

Institute for Nuclear Research of NASU  
47 Prospekt Nauky  
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h-index = 17 (excluding self-citations)

### Education

#### ❖ Ph.D. in Nuclear, Particle and High Energy Physics, 2015

*Centre de Sciences Nucléaires et de Sciences de la Matière and University of Paris-Sud, Orsay, France / Institute for Nuclear Research NASU, Kyiv, Ukraine*

Thesis title: “Development of cryogenic low background detector based on enriched zinc molybdate crystal scintillators to search for neutrinoless double beta decay of  $^{100}\text{Mo}$ ”, <http://arxiv.org/abs/1507.04591>

#### ❖ Master of Science in Experimental Nuclear Physics, 2011

*Taras Shevchenko National University of Kyiv, Faculty of Physics, Nuclear Physics Department, Kyiv, Ukraine*

Thesis title: “Low-background detector with  $^{116}\text{CdWO}_4$  crystal scintillators to search for  $2\beta$  decay of  $^{116}\text{Cd}$ ”

#### ❖ Bachelor of Science in Physics, 2009

*Taras Shevchenko National University of Kyiv, Faculty of Physics, Nuclear Physics Department, Kyiv, Ukraine*

Thesis title: “Development of the low-background scintillating detector with  $\text{CaMoO}_4$  crystal scintillators to search for neutrinoless double beta decay of  $^{100}\text{Mo}$ ”

### Research experience

Aug. 2020 – present Postdoctoral Researcher, *University of Alabama, Tuscaloosa, Alabama, USA*

July 2015 – present Junior scientific researcher, *Lepton Physics Department, Institute for Nuclear Research NASU, Kyiv, Ukraine*

June 2019 – Aug. 2020 Postdoctoral Researcher, *University of South Dakota, Vermillion, South Dakota, USA*

May 2016 – June 2019 Project Researcher, *Kavli Institute for the Physics and Mathematics of the Universe, The University of Tokyo, Japan*

Aug. – Sept. 2016 Research activity (37 days) at the *Baksan Neutrino Observatory, Institute for Nuclear Research RAS, Neutrino, Russia* (Project “16K05371”)

- December 2015      Research activity (14 days) at the *Centre de Sciences Nucléaires et de Sciences de la Matière (Orsay, France)* within the LUMINEU Collaboration (Project “95471S – LIA – CNRS”)
- April 2012      Research activity at the *Laboratoire Souterrain de Modane (Modane, France)* within the LUMINEU and EDELWEISS Collaborations
- Jan. 2012 – Dec. 2014      Research activity as hired personnel of *ISOTTA project (ISOTOpe Trace Analysis, <http://isotta.in2p3.fr/>)*, funded in the framework of the ASPERA 2nd Common Call for R&D Activities
- Oct. 2010 – Sept. 2015      Research activity (20–50 days per year) at the *Laboratori Nazionali del Gran Sasso of the INFN (Assergi, Italy)* and the *Department of Physics of the University of Rome "La Sapienza" (Rome, Italy)* within the DAMA Collaboration (full time – 160 days)
- July 2009 – June 2015      First-class engineer, *Lepton Physics Department, Institute for Nuclear Research NASU, Kyiv, Ukraine*
- Sept. 2008 – Dec. 2008      Second-class technician, *Lepton Physics Department, Institute for Nuclear Research NASU, Kyiv, Ukraine*

## Honors and Awards

- ❖ April 2019 – June 2019  
Grant-in-Aid for Early-Career Scientists of Japan Society for the Promotion of Science, KAKENHI Grant Number JP19K14733, Japan
- ❖ June 2013 – May 2015  
Yu.G.Zdesenko Scholarship of the Institute for Nuclear Research NASU, Ukraine
- ❖ Jan. 2010 – June 2010  
Scholarship of the National Nuclear Energy Generating Company of Ukraine “Energoatom” for successful students, Ukraine

## Collaborations

- ❖ **nEXO** (since 2020)  
*(next Enriched Xenon Observatory)*  
Selection of radiopure materials using neutron activation analysis and HPGe detectors; Radon daughters attachment study for various materials; Data analysis and Monte Carlo simulation of alpha particles detector.
- ❖ **PICO-LON** (since 2016)  
*(Dark Matter search using ultra-radiopure NaI(Tl) crystals)*  
Development of the ultra-radiopure NaI(Tl) detectors; Calibration and background measurements with NaI(Tl) detectors in the Kamioka underground laboratory; Development, construction and measurements with the neutron and radon detectors; Monte Carlo simulation of the detectors using GEANT4 package.
- ❖ **COHERENT** (2019–2020)  
*(Measurement of Coherent Elastic Neutrino-Nucleus Scattering)*  
Development of the cryogenic scintillating detectors for CEvNS measurements and accelerator-based dark matter search; Data analysis of non-linearity tests for CsI quenching factor measurements; Outreach and Communication coordinator.

**❖ KamLAND-Zen (2016–2020)**

*(Search for  $0\nu 2\beta$  decay of  $^{136}\text{Xe}$  using Xe-loaded liquid scintillator)*

Mini-balloon construction, assembling and filling; Energy calibration of the detector; Development and construction of the HPGe set-up; GEANT4 Monte Carlo simulation of the HPGe detector and measured samples; Selection of radiopure materials using low-background HPGe detector; Experiment shifts and on-site work in the Kamioka underground laboratory.

**❖ LUMINEU (2012–2017)**

*(Development of  $^{100}\text{Mo}$ -containing scintillating bolometers for  $0\nu 2\beta$  decay search)*

Monte Carlo simulation of the experiment; Development of the software to reject randomly coinciding events in scintillating bolometers; Study of optical, luminescence, scintillation and bolometric properties of  $\text{ZnMoO}_4$  and  $\text{Li}_2\text{MoO}_4$  crystals; Construction of the aboveground cryostat facility.

**❖ DAMA (since 2010)**

*(Search for double beta decay of  $^{116}\text{Cd}$  with enriched  $^{116}\text{CdWO}_4$  crystal scintillators)*

Development and assembling of the low-background detector with  $^{116}\text{CdWO}_4$  crystals; Energy calibration of the detector; Study of optical and scintillation properties of  $^{116}\text{CdWO}_4$  crystals; Development of the double-channel trigger unit for  $^{116}\text{CdWO}_4$  detector.

**❖ AMoRE (since 2009)**

*(Search for neutrinoless double beta decay of  $^{100}\text{Mo}$  with  $^{40}\text{Ca}^{100}\text{MoO}_4$  crystals)*

Measurements of scintillation properties of  $\text{CaMoO}_4$  samples; Development of the detector prototype based on  $\text{CaMoO}_4$  scintillation crystal; Development of the trigger unit to separate slow  $\text{CaMoO}_4$  scintillation signals, signals from noises and signals of plastic scintillator.

**Organization of scientific meetings**

- ❖ Member of the organizing committee of the KamLAND Collaboration meeting 2018, *Toyama, Japan, 13–15 March 2018*
- ❖ Member of the local organizing committee of the first general LUMINEU meeting, *CSNSM-Orsay, France, 4 February 2013*
- ❖ Member of the local organizing committee of the International Workshop on Radiopure Scintillators (RPSCINT 2013), *Institute for Nuclear Research NASU, Kyiv, Ukraine, 17–20 September 2013*

**Languages**

Russian and Ukrainian – native; English – proficient; Japanese – elementary

**Computer Skills**

C++, ROOT, PAW, GEANT4, Origin, Octave, LabVIEW, Kompas 3D

**Conferences**

I have 27 talks & 9 posters at the following international conferences, workshops, and schools.

1. Magnificent CEvNS 2019, *PIT, Chapel Hill, North Carolina, USA, 09–11 November 2019*

2. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 08–12 April 2019*
3. KamLAND Collaboration Meeting, *Sendai, Japan, 22–24 March 2019*
4. IV International Conference on Particle Physics and Astrophysics, *Moscow, Russia, 22-26 October 2018*
5. KamLAND Collaboration Meeting, *Toyama, Japan, 13–15 March 2018*
6. Kavli IPMU 10th Anniversary Symposium, *Kashiwa, Japan, 16–18 October 2017*
7. KamLAND Collaboration Meeting, *Sendai, Japan, 19–21 September 2017*
8. Gordon Research Conference and Seminar in Particle Physics: Pushing the Frontiers of Particle Physics During the LHC Run II Era, *Hong Kong, China, 24-30 June 2017*
9. Invited seminar at the Research Center for Neutrino Science (RCNS) of Tohoku University, *Mozumi, Japan, 02 March 2016*
10. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 01–05 February 2016*
11. Luminescent processes in condensed state of matter (LUMCOS 2015), *Kharkov, Ukraine, 07–09 October 2015*
12. Invited seminar at the Laboratori Nazionali del Gran Sasso of the INFN, *Assergi, Italy, 10 September 2015*
13. French annual PhD student conference "Journes Des Doctorants 2015", *Orsay, France, 20–21 May 2015*
14. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 26–30 January 2015*
15. French annual PhD student conference "Journes Des Doctorants 2014", *Orsay, France, 9–10 April 2014*
16. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 27–31 January 2014*
17. 2nd LUMINEU general meeting, Centre de Sciences Nucléaires et de Sciences de la Matière (CSNSM), *Orsay, France, 13–14 January 2014*
18. International Workshop on Radiopure Scintillators (RPSCINT 2013), Institute for Nuclear Research NASU, *Kyiv, Ukraine, 17–20 September 2013*
19. Groupement de Recherche (GDR) Neutrino meeting, Pierre-and-Marie-Curie University (Paris VI), *Paris, France, 21–22 May 2013*
20. French annual PhD student conference "Journes des Doctorants 2013", *Orsay, France, 27-28 March 2013*
21. 1st LUMINEU general meeting, Centre de Sciences Nucléaires et de Sciences de la Matière (CSNSM), *Orsay, France, 04 February 2013*
22. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 28 January – 01 February 2013*
23. Workshop on results of the program of NAS Ukraine «Astroparticle physics (Kosmomikrofizyka-2)», Institute for Nuclear Research NASU, *Kyiv, Ukraine, 21–22 November 2012*
24. V International Pontecorvo Neutrino Physics School, *Alushta, Crimea, Ukraine, 6–16 September 2012*
25. The 4<sup>th</sup> International Conference on Current Problems in Nuclear Physics and Atomic Energy, *Kyiv, Ukraine, 3–7 September 2012*

26. 11<sup>th</sup> CNS International Summer School, Center for Nuclear Study (CNS), the University of Tokyo, *Wako, Saitama, Japan, 29 August – 04 September 2012*
27. French annual PhD student conference “Journées des Doctorants 2012”, *Orsay, France, 5-6 April 2012*
28. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 24–27 January 2012*
29. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 25–28 January 2011*
30. International Student Workshop on Neutrinoless Double Beta Decay, *LNGS, Italy, 11–13 November 2010*
31. Carpathian Summer School of Physics 2010 Exotic Nuclei, Nuclear and Particle Astrophysics "From nuclei to stars", *Sinaia, Romania, 20 June – 03 July 2010*
32. The 3<sup>rd</sup> International Conference on Current Problems in Nuclear Physics and Atomic Energy, *Kyiv, Ukraine, 7–12 June 2010*
33. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 26–29 January 2010*
34. Trans-European School of High Energy Physics, *Zakopane, Poland, 6–16 July 2009*
35. Annual Scientific Conference, Institute for Nuclear Research NASU, *Kyiv, Ukraine, 20–23 January 2009*

## Publications

I am co-author of 22 papers in refereed journals and 42 conference proceedings.

### Papers in refereed journals

1. K. Ding, D. Chernyak, J. Liu, [Light yield of cold undoped CsI crystal down to 13 keV and the application of such crystals in neutrino detection](#). *Eur. Phys. J. C* 80(2020)1146, 12 p.
2. D. Chernyak et al., [Prospect of undoped inorganic crystals at 77 Kelvin for low-mass dark matter search at Spallation Neutron Source](#). *Eur. Phys. J. C* 80(2020)547, 12 p.
3. V. Alenkov et al., [First results from the AMoRE-Pilot neutrinoless double beta decay experiment](#). *Eur. Phys. J. C* 79(2019)791, 12 p.
4. A. Gando et al. (KamLAND-Zen Collaboration), [Precision Analysis of the  \$^{136}\text{Xe}\$  Two-Neutrino  \$\beta\beta\$  Spectrum in KamLAND-Zen and Its Impact on the Quenching of Nuclear Matrix Elements](#). *Phys. Rev. Lett.* 122(2019)192501, 7 p.
5. A. S. Barabash et al. [Final results of the Aurora experiment to study  \$2\beta\$  decay of  \$^{116}\text{Cd}\$  with enriched  \$^{116}\text{CdWO}\_4\$  crystal scintillators](#). *Phys. Rev. D* 98(2018)092007, 16 p.
6. A. Kozlov, D. Chernyak. [A large area detector for thermal neutron flux measurements at the KamLAND site](#). *Nucl. Instrum. Meth. A* 903(2018)162-169
7. E. Armengaud et al. [Development of  \$^{100}\text{Mo}\$ -containing scintillating bolometers for a high-sensitivity neutrinoless double-beta decay search](#). *Eur. Phys. J. C* 77(2017)785, 25 p.
8. D.M. Chernyak et al. [Rejection of randomly coinciding events in  \$\text{Li}\_2^{100}\text{MoO}\_4\$  scintillating bolometers using light detectors based on the Neganov-Luke effect](#). *Eur. Phys. J. C* 77(2017)3, 7 p.
9. P. Belli et al. [Search for  \$2\beta\$  decay of  \$^{106}\text{Cd}\$  with an enriched  \$^{106}\text{CdWO}\_4\$  crystal scintillator in coincidence with four HPGe detectors](#). *Phys. Rev. C* 93(2016)045502, 9 p.
10. D.M. Chernyak et al. [Effect of tungsten doping on  \$\text{ZnMoO}\_4\$  scintillating bolometer performance](#). *Optical Materials* 49(2015)67–74.

11. E.Armengaud et al. [Development and underground test of radiopure ZnMoO<sub>4</sub> scintillating bolometers for the LUMINEU 0ν2β project](#). JINST 10(2015)P05007, 19 p.
12. L.Berge et al. [Purification of molybdenum, growth and characterization of medium volume ZnMoO<sub>4</sub> crystals for the LUMINEU program](#). JINST 09(2014)P06004, 18 p.
13. A.S.Barabash et al. [Enriched Zn<sup>100</sup>MoO<sub>4</sub> scintillating bolometers to search for 0ν2β decay of <sup>100</sup>Mo with the LUMINEU experiment](#). Eur. Phys. J. C 74(2014)3133, 7 p.
14. D.M.Chernyak et al. [Rejection of randomly coinciding events in ZnMoO<sub>4</sub> scintillating bolometers](#). Eur. Phys. J. C 74(2014)2913, 6 p.
15. D.M.Chernyak et al. [Optical, luminescence and thermal properties of radiopure ZnMoO<sub>4</sub> crystals used in scintillating bolometers for double beta decay search](#). Nucl. Instrum. Meth. A 729(2013)856-863.
16. D.M.Chernyak et al. [Random coincidence of 2ν2β decay events as a background source in bolometric 0ν2β decay experiments](#). Eur. Phys. J. C 72(2012)1989, 6 p.
17. P.Belli et al. [Search for double-β decay processes in <sup>106</sup>Cd with the help of a <sup>106</sup>CdWO<sub>4</sub> crystal scintillator](#). Phys. Rev. C 85(2012)044610, 12 p.
18. A.S.Barabash et al. [Low background detector with enriched <sup>116</sup>CdWO<sub>4</sub> crystal scintillators to search for double β decay of <sup>116</sup>Cd](#). JINST 06(2011)P08011, 24 p.
19. P.Belli et al. [Development of enriched <sup>106</sup>CdWO<sub>4</sub> crystal scintillators to search for double β decay processes in <sup>106</sup>Cd](#). Nucl. Instrum. Meth. A 615(2010)301-306.
20. H.J.Kim et al. [Neutrino-less double beta decay experiment using Ca<sup>100</sup>MoO<sub>4</sub> scintillation crystals](#). IEEE Trans. Nucl. Sci. 57(2010)1475-1480.
21. R.B.Podviyanuk, V.V.Kobychev, D.N.Chernyak. [Spectrometer for slow scintillation detectors with pulses shape digitizing](#). J. Nucl. Phys. At. En. 10(2009)318-325 (in Russian).
22. F.A.Danevich et al. [MgWO<sub>4</sub> – A new crystal scintillator](#). Nucl. Instrum. Meth. A 608(2009)107-115.

#### Conference proceedings

1. A. Kozlov, D. Chernyak, et al., [Detectors for direct Dark Matter search at KamLAND](#). Nucl. Instrum. Meth. A 958(2020)162239, 4 p.
2. Y.Kanemitsu et al. [Purification of the NaI\(Tl\) crystal for dark matter search project PICOLON](#). J. Phys.: Conf. Ser. 1468(2020)012054, 3 p.
3. K.-I.Fushimi et al. [PICOLON dark matter search ~Development of highly radio-pure NaI\(Tl\) scintillator~](#). J. Phys.: Conf. Ser. 1468(2020)012057, 4 p.
4. A. Kozlov, D. Chernyak, et al., [The Dark Matter search at KamLAND](#). J. Phys.: Conf. Ser. 1390(2019)012118, 8 p.
5. K.-I.Fushimi et al. [Dark Matter Search by Means of Highly Radiopure NaI\(Tl\) Scintillator](#). JPS Conf. Proc. 24(2019)011011, 6 p.
6. V. I. Tretyak et al., [Aurora experiment: Final results of studies of <sup>116</sup>Cd 2β decay with enriched <sup>116</sup>CdWO<sub>4</sub> crystal scintillators](#). AIP Conf. Proc. 2165(2019) 020029, 4 p.
7. A. Di Marco et al. [Recent developments and results on double beta decays with crystal scintillators and HPGe spectrometry](#). Universe 4(2018)147, 14 p.
8. A.S.Barabash et al. [Search for rare processes with DAMA experimental set-ups](#). EPJ Web of Conf. 182(2018)020126, 10 p.
9. O.G.Polischuk et al. [Investigation of 2β decay of <sup>116</sup>Cd with the help of enriched <sup>116</sup>CdWO<sub>4</sub> crystal scintillators](#). AIP Conf. Proc. 1894(2017)02018, 4 p.
10. V.I.Tretyak et al. [New limits on 2β processes in <sup>106</sup>Cd](#). J. Phys.: Conf. Ser. 718(2016)062062, 5 p.

11. F.A.Danevich et al. [Search for double beta decay of  \$^{116}\text{Cd}\$  with enriched  \$^{116}\text{CdWO}\_4\$  crystal scintillators \(Aurora experiment\)](#). J. Phys.: Conf. Ser. 718(2016)062009, 5 p.
12. E.Armengaud et al. [LUMINEU: a search for neutrinoless double beta decay based on  \$\text{ZnMoO}\_4\$  scintillating bolometers](#). J. Phys.: Conf. Ser. 718(2016)062008, 5 p.
13. J.Y.Lee et al. [A study of radioactive contamination of  \$^{40}\text{Ca}^{100}\text{MoO}\_4\$  crystals for the AMoRE experiment](#). IEEE Trans. Nucl. Sci. 63(2016)543-547.
14. R.Bernabei et al. [Recent results on the search for  \$2\beta\$  decay processes with scintillators and pure samples](#). Proc. 16<sup>th</sup> Lomonosov Conf. on Element. Part. Phys., 22-28.08.2013, Moscow, Russia – World. Sci. 2015, p. 300-304.
15. O.G.Polischuk et al. [Investigation of double beta decay of  \$^{116}\text{Cd}\$  with the help of enriched  \$^{116}\text{CdWO}\_4\$  crystal scintillators](#). AIP Conf. Proc. 1686(2015)020017, 4 p.
16. F.A.Danevich et al. [Status of LUMINEU program to search for neutrinoless double beta decay of  \$^{100}\text{Mo}\$  with cryogenic  \$\text{ZnMoO}\_4\$  scintillating bolometers](#). AIP Conf. Proc. 1686(2015)020007, 4 p.
17. F.A.Danevich et al. [Search for double beta processes in  \$^{106}\text{Cd}\$  with enriched  \$^{106}\text{CdWO}\_4\$  crystal scintillator in coincidence with four crystals HPGe detector](#). AIP Conf. Proc. 1686(2015)020006, 4 p.
18. D.V.Poda et al. [Radiopure  \$\text{ZnMoO}\_4\$  scintillating bolometers for the LUMINEU double-beta experiment](#). AIP Conf. Proc. 1672(2015)040003, 6 p.
19. O.G.Polischuk et al. [Search for  \$2\beta\$  processes in  \$^{106}\text{Cd}\$  with  \$^{106}\text{CdWO}\_4\$  crystal scintillator](#). Functional Materials 22(2015)135-139.
20. D.M.Chernyak et al. [Rejection of randomly coinciding  \$2\nu 2\beta\$  events in  \$\text{ZnMoO}\_4\$  scintillating bolometers](#). EPJ Web of Conferences 65(2014)04002, 4 p.
21. V.N.Shlegel et al. [Purification of molybdenum oxide, growth and characterization of medium size zinc molybdate crystals for the LUMINEU program](#). EPJ Web of Conferences 65(2014)03001, 6 p.
22. D.V.Poda et al. [Search for  \$2\beta\$  decay of  \$^{116}\text{Cd}\$  with the help of enriched  \$^{116}\text{CdWO}\_4\$  crystal scintillators](#). EPJ Web of Conferences 65(2014)01005, 4 p.
23. V.I.Tretyak et al. [First results of the experiment to search for  \$2\beta\$  decay of  \$^{106}\text{Cd}\$  with  \$^{106}\text{CdWO}\_4\$  crystal scintillator in coincidence with four crystals HPGe detector](#). EPJ Web of Conferences 65(2014)01004, 4 p.
24. M.Mancuso et al. [An aboveground pulse-tube-based bolometric test facility for the validation of the LUMINEU  \$\text{ZnMoO}\_4\$  crystals](#). J. Low Temp. Phys. 176(2014)571-577.
25. D.M.Chernyak et al. [Cryogenic zinc molybdate scintillating bolometers to search for neutrinoless double beta decay of  \$^{100}\text{Mo}\$](#) . Мат. наради “Астрофізичні і космологічні проблеми прихованої маси і темної енергії Всесвіту (Космомікрофізика-2)”, 21-22.11.2012, ІЯД НАН України, Київ – Київ, 2013, с. 75-77.
26. D.M.Chernyak et al. [Cryogenic zinc molybdate scintillating bolometers to search for neutrinoless double beta decay of  \$^{100}\text{Mo}\$](#) . Proc. 4-th Int. Conf. on Current Problems in Nucl. Phys. and At. Energy (NPAE-Kyiv2012), Kyiv, 2013, p. 374-377.
27. A.S.Barabash et al. [First results of the experiment to search for double beta decay of  \$^{116}\text{Cd}\$  with the help of enriched  \$^{116}\text{CdWO}\_4\$  crystal scintillators](#). Proc. 4-th Int. Conf. on Current Problems in Nucl. Phys. and At. Energy (NPAE-Kyiv2012), Kyiv, 2013, p. 353-356.
28. F.A.Danevich et al. [Development of radiopure cadmium tungstate crystal scintillators from enriched  \$^{106}\text{Cd}\$  and  \$^{116}\text{Cd}\$  to search for double beta decay](#). AIP Conf. Proc. 1549(2013)201-204.
29. R.Bernabei et al. [Crystal scintillators for low background measurements](#). AIP Conf. Proc. 1549(2013)189-196.

30. D.V.Poda et al. [CdWO<sub>4</sub> crystal scintillators from enriched isotopes for double beta decay experiments](#). Rad. Meas. 56(2013)66-69.
31. J.H.So et al. [A study of CaMoO<sub>4</sub> crystals for the AMoRE experiment](#). IEEE Nucl. Sci. Symp. 2012, pp. 1987-1990.
32. M.Tenconi et al. [Bolometric light detectors for neutrinoless double beta decay search](#). Proc. of Science PoS(PhotoDet-2012)072, 6 p.
33. A.S.Barabash et al. [Development of CdWO<sub>4</sub> crystal scintillators from enriched isotopes for 2 \$\beta\$ -decay experiments](#). Proc. Int. Conf. on Oxide Mat. for Electronic Engineering OMEE-2012, 3-7.09.2012, Lviv, Ukraine, p. 233-234.
34. P.Belli et al. [Searches for neutrinoless resonant double electron captures at LNGS](#). J. Phys.: Conf. Ser. 375(2012)042024, 4 p.
35. H.Bhang et al. [AMoRE experiment: a search for neutrinoless double beta decay of <sup>100</sup>Mo isotope with <sup>40</sup>Ca<sup>100</sup>MoO<sub>4</sub> cryogenic scintillation detector](#). J. Phys.: Conf. Ser. 375(2012)042023, 4 p.
36. P.Belli et al. [Search for double  \$\beta\$  decay of <sup>106</sup>Cd by using isotopically enriched <sup>106</sup>CdWO<sub>4</sub> crystal scintillator](#). J. Phys.: Conf. Ser. 375(2012)042021, 4 p.
37. J.H.So et al. [Scintillation properties and internal background study of <sup>40</sup>Ca<sup>100</sup>MoO<sub>4</sub> crystal scintillators for neutrino-less double beta decay search](#). IEEE Trans. Nucl. Sci. 59(2012)2214-2218.
38. P.Belli et al. [First results of the experiment to search for 2 \$\beta\$  decay of <sup>106</sup>Cd with the help of <sup>106</sup>CdWO<sub>4</sub> crystal scintillators](#). Proc. Int. Conf. NPAE-Kyiv2010, 7-12.06.2010, Kyiv, Ukraine – Kyiv, 2011, p. 428-431.
39. P.Belli et al. [First results of the experiment to search for 2 \$\beta\$  decay of <sup>106</sup>Cd with the help of <sup>106</sup>CdWO<sub>4</sub> crystal scintillators](#). Nucl. Phys. At. Energy 12(2011)124-128.
40. A.Barabash et al. [Double  \$\beta\$  experiments with the help of scintillation and HPGe detectors at Gran Sasso](#). AIP Conf. Proc. 1417(2011)28-32.
41. F.A.Danevich et al. [MgWO<sub>4</sub> – a new crystal scintillator](#). Proc. Trans-European School High En. Phys., Zakopane, Poland, 8-14.06.2009 – 2010, p. 151-152.
42. P.Belli et al. [First results of the experiment to search for 2 \$\beta\$  decay of <sup>106</sup>Cd with the help of <sup>106</sup>CdWO<sub>4</sub> crystal scintillators](#). AIP Conf. Proc. 1304(2010)354-358.

## References

### ❖ **Jing Liu (Postdoc advisor)**

Professor

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### ❖ **Alexandre Kozlov (Former postdoc advisor)**

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**❖ Andrea Giuliani (PhD supervisor)**

Professor, Research Director at Centre National de la Recherche Scientifique  
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