Mihaela PÂRVU

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Educație

Licențiat în Fizică, Facultatea de Fizică, Universitatea din București, 2016.

Master în Fizică, Facultatea de Fizică, Universitatea din București, 2018.

Doctor în Fizică, Facultatea de Fizică, Universitatea din București, May 2022.

Coduri de simulare si limbaje de programare:

- C++, Fortran, FLUKA, Talys, EMPIRE, ROOT, MARLEY, SNOwGLoBES, COSMO, Mathematica.

Premii si burse

Bursa doctorala, Facultatea de Fizică, Universitatea din București, 2018-2021

Premierea rezultatelor cercetarii:

- Articol Q1 - PN-III-P1-1.1 - PRECISI-2021-53601

- Articol Q1 - PN-III-P1-1.1 - PRECISI-2021-53382

- Articol Q1 - PN-III-P1-1.1 - PRECISI-2019-29838

Experiența didactică

Asistent Universitar Doctorand la Facultatea de Fizică a Universității din București din luna Februarie 2019.

Laboratoare:
- Detectori, dozimetrie și radioprotecție
- Interacția radiației cu materia
- Bazele fizicii nucleare
- Fizica particulelor elementare

Dezvoltarea profesională

FLUKA.CERN Course, Bruxelles, Belgia, 16-20 May 2022.

The VIII Pontecorvo Neutrino Physics School, Sinaia, Romania, 2 September 2019.

Sao Paulo School of Advanced Science on Experimental Neutrino Physics, Campinas, Sao Paulo, Brazil, 12 December 2018.

Activities within the WA105/NP02 collaboration, CERN, 7-17 Noiembrie 2018

Activities within the WA105/NP02 collaboration, CERN, 3-9 June 2018.

Activities within the WA105/NP02 collaboration, CERN, 6-16 December 2017.

NuSTEC School (Neutrino Scattering Theory-Experiment Collaboration), Fermilab, 7-15 November 2017.

The VII Pontecorvo Neutrino Physics School, Prague, 20 August - 1 September 2017.

The 8th International Student Summer School "Nuclear Physics - Science and Applications", Brasov, 26 July - 4 August 2017.

Research practice, Joint Institute for Nuclear Research, 2-22 July 2017.

Research practice, CITON - Magurele, Romania, October - November 2014.

Research practice, Horia Hulubei National Institute of Nuclear Physics and Engineering - Magurele, Romania, Summer 2014.

Publicații

Articole științifice cu un număr restrâns de autori

1. ***M. PÂRVU*** and I. Lazanu, Can strangelets be detected in a large LAr neutrino detector?, JCAP **11** (2021), 040, doi:10.1088/1475-7516/2021/11/040, arXiv:2107.05257. **AIS(2020) = 1.296 (Q1)**, IF(2020)=5.21.
2. ***M. PÂRVU*** and I. Lazanu, Radioactive background for ProtoDUNE detector, JCAP **08** (2021), 042, doi: 10.1088/1475-7516/2021/08/042, arXiv:2104.10604, **AIS(2020) = 1.296 (Q1)**, IF(2020)=5.21.
3. I. Lazanu., S. Lazanu, ***M. PÂRVU***, About detecting very low mass black holes in LAr detectors, JCAP **10** (2020), 046,
doi:10.1088/1475-7516/2020/10/046, arXiv:2006.09974, **AIS(2020) = 1.296 (Q1)**, IF(2020)=5.21.
4. ***M. PÂRVU***, I. Lazanu., A. Chiriacescu, Some considerations about cosmogenic production of radioactive isotopes in Ar as target for the next neutrino experiments, Published in Radiat.Phys.Chem. 152 (2018) 129, doi: 10.1016/j.radphyschem.2018.08.009, e-Print: arXiv:1712.04399, **AIS(2018) = 0.31 (Q1)**, IF(2018)=2.126.
5. ***M. PÂRVU***, A. Chiriacescu, I. Lazanu, A. Jipa, O. Ristea, M. Calin, Muon induced radioactivity in the next generation of neutrino experiments, 2019. Published in AIP Conf.Proc. 2075 (2019) no.1, 090010 DOI: 10.1063/1.5091224.

Articole științifice în cadrul colaborărilor ProtoDUNE și DUNE

1. B. Aimard, ***M. PÂRVU***, *et al.*, Performance study of a $3\times1\times1$ m^3 dual phase liquid Argon Time Projection Chamber exposed to cosmic rays, JINST 16 (2021) 08, P08063, doi: 10.1088/1748-0221/16/08/P08063 [e-Print: 2104.08227 [physics.ins-det]].
2. B. Aimard, ***M. PÂRVU***, *et al.*, Study of scintillation light collection, production and propagation in a 4 tonne dual-phase LArTPC, JINST **16** (2021) no.03, P03007 doi:10.1088/1748-0221/16/03/P03007, [arXiv:2010.08370 [physics.ins-det]].
3. A. Abed Abud, ***M. PÂRVU***, *et al.* [DUNE], Deep Underground Neutrino Experiment (DUNE) Near Detector Conceptual Design Report, Instruments 5 (2021) 4, 31, doi: 10.3390/instruments5040031.
4. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Prospects for beyond the Standard Model physics searches at the Deep Underground Neutrino Experiment, Eur. Phys. J. C **81** (2021) no.4, 322, doi: 10.1140/epjc/s10052-021-09007-w, [arXiv:2008.12769 [hep-ex]].
5. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Supernova neutrino burst detection with the Deep Underground Neutrino Experiment,Eur. Phys. J. C **81** (2021) no.5, 423, doi: 10.1140/epjc/s10052-021-09166-w, [arXiv:2008.06647 [hep-ex]].

6. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], First results on ProtoDUNE-SP liquid argon time projection chamber performance from a beam test at the CERN Neutrino Platform, JINST **15** (2020) no.12, P12004, doi: 10.1088/1748-0221/15/12/ P12004, [arXiv:2007.06722 [physics.ins-det]].
7. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Neutrino interaction classification with a convolutional neural network in the DUNE far detector, Phys. Rev. D **102** (2020) no.9, 092003, doi: 10.1103/PhysRevD.102.092003,[arXiv:2006.15052 [physics.ins-det]].
8. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Long-baseline neutrino oscillation physics potential of the DUNE experiment, Eur. Phys. J. C **80** (2020) no.10, 978, doi: 10.1140/epjc/s10052-020-08456-z, [arXiv:2006.16043 [hep-ex]].
9. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume I Introduction to DUNE, JINST **15** (2020) no.08, T08008, doi:10.1088/1748-0221/15/08/T08008, [arXiv:2002.02967 [physics.ins-det]].
10. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume III: DUNE Far Detector Technical Coordination, JINST **15** (2020) no.08, T08009 doi:10.1088/1748-0221/15/08/T08009, [arXiv:2002.03008 [physics.ins-det]].
11. B. Abi, ***M. PÂRVU***, *et al.* [DUNE], Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume IV: Far Detector Single-phase Technology, JINST **15** (2020) no.08, T08010 doi: 10.1088/1748-0221/15/08/T08010, [arXiv:2002.03010 [physics.ins-det]].
12. B. Aimard, ***M. PÂRVU***, *et al.*, A 4 tonne demonstrator for large-scale dual-phase liquid argon time projection chambers, JINST **13** (2018) no.11, P11003, doi:10.1088/1748-0221/13/11/P11003, [arXiv:1806.03317 [physics.ins-det]].

Prezentări orale la conferințe și postere

1. ***Mihaela PÂRVU***, Ionel LAZANU, Strangelets detection with large LAr detectors, Searching for long-lived particles at the LHC and beyond: Tenth workshop of the LLP Community, Online, CERN, 9-12 November 2021 - **Invited talk**.
2. ***Mihaela PÂRVU***, Ionel LAZANU, Overview of Neutrino-Nucleus Interactions - incomplete theoretical knowledge of the nuclear effects, Bucharest University Faculty of Physics 2021 Meeting, Magurele, Romania, 18 June 2021.
3. ***Mihaela PÂRVU***, Ionel LAZANU, On the possibility of strangelets detection, Bucharest University Faculty of Physics 2021 Meeting, Magurele, Romania, 18 June 2021.
4. ***Mihaela PÂRVU***, Alexandru MANEA, Ionel LAZANU, A simple method of energy calibration for plastic and liquid scintillators, Bucharest University Faculty of Physics 2021 Meeting, Magurele, Romania, 18 June 2021.
5. ***Mihaela PÂRVU***, ProtoDUNE-DP Muon and Neutron Backgrounds and Possible Impacts on DUNE FD, DUNE Collaboration Week, CERN, Geneva, Elvetia, 30 January 2020.
6. Ana CHIRIACESCU, ***Mihaela PÂRVU***, Background studies for rare events physics using LAr detectors (POSTER), The VIII Pontecorvo Neutrino Physics School, Sinaia, Romania, 2 September 2019.
7. ***Mihaela PÂRVU***, Ionel LAZANU, Pion interactions in argon and their role in neutrino oscillation experiments, Bucharest University Faculty of Physics 2019 Meeting, Magurele, Romania, 21 June 2019.
8. Ana CHIRIACESCU, ***Mihaela PÂRVU***, Ionel LAZANU, Experimental study of plastic detectors differential etching for radioactive background measurements, Bucharest University Faculty of Physics 2019 Meeting, Magurele, Romania, 21 June 2019.

9. ***Mihaela PÂRVU***, Background studies for supernova neutrinos in future LAr detectors (POSTER), Sao Paulo School of Advanced Science on Experimental Neutrino Physics, Campinas, Sao Paulo, Brazil, 12 December 2018.
10. Ana CHIRIACESCU, ***Mihaela PÂRVU***, Ionel LAZANU, Alexandru JIPA, Oana RISTEA, Marius CALIN, Investigation of the Cherenkov light emission as indirect consequence of cosmogenic reactions in LAr detectors, 10th Jubilee International Conference of the Balkan Physical Union, Sofia, Bulgaria, 29 August 2018.
11. ***Mihaela PÂRVU***, Ana CHIRIACESCU, Ionel LAZANU, Alexandru JIPA, Oana RISTEA, Marius CALIN, Muon induced radioactivity in the next generation of neutrino experiments, 10th Jubilee International Conference of the Balkan Physical Union, Sofia, Bulgaria, 29 August 2018.
12. ***Mihaela PÂRVU***, Alice PAUN, Ionel LAZANU, Development of a small Time Projection Chamber test detector model with gas for laboratory studies, Bucharest University Faculty of Physics 2018 Meeting, Magurele, Romania, 22 June 2018.
13. ***Mihaela PÂRVU***, Analysis of low energy neutrino - nucleus interaction and aspects of cosmogenic radioactive background in LAr detectors, Bucharest University Faculty of Physics 2018 Meeting, Magurele, Romania, 22 June 2018.
14. ***Mihaela PÂRVU***, Ana CHIRIACESCU, Double Phase Liquid Argon TPC – present stage of the construction, Bucharest University Faculty of Physics 2018 Meeting, Magurele, Romania, 21 June 2018.
15. ***Mihaela PÂRVU***, Simulation of nucleon spallation using COSMO code and preliminary results for radioactivity induced by muon activation – impacts on deep underground LAr neutrino experiments, The 8th International Student Summer School "Nuclear Physics – Science and Applications", Brasov, Romania, 1 August 2017.
16. Ionel LAZANU, Ana CHIRIACESCU, ***Mihaela PÂRVU***, Alexandru JIPA, Oana RISTEA, Marius CALIN, Phenomenological aspects of the activation of argon due to neutrons and muons from cosmic rays, Bucharest University Faculty of Physics 2017 Meeting, Magurele, Romania, 23 June 2017.
17. ***Mihaela PÂRVU***, Ionel LAZANU, Preliminary results of the simulation of cosmogenic activation of materials used in the next generation of neutrino experiments, Bucharest University Faculty of Physics 2017 Meeting, Magurele, Romania, 23 June 2017.