

Alice Paun

Physicist

PERSONAL DETAILS

Email address

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Telephone number

0760891944

Address

Bujorului nr. 3

Postal code

077025

City/Town

Bragadiru

Date of birth

29/01/1996

Place of birth

Bucharest

Driver's license

B

Gender

Female

Nationality

Romanian

SKILLS

FORTRAN



C/C++



ROOT @CERN Software



Python



LANGUAGES

English

Highly proficient in speaking and in writing

STUDIES AND CERTIFICATES

• Doctoral degree

Faculty of Physics, University of Bucharest, Magurele

2020 - Present

Exploring the Universe using neutrino telescopes - contributions to the new generation of detection systems

• Master of Science

Faculty of Physics, University of Bucharest, Magurele

2018 - 2020

For my MSc degree I studied the SQM particles using Monte Carlo simulations optimized for the two configurations of the KM3NeT detector: ARCA and ORCA. During the MSc project I acquired knowledge regarding exotic particles, particularly nuclearites (interaction with matter, detection method) and I improved my programming skills regarding FORTRAN, C++. I also learned how to work with simulation data and to analyze it using ROOT software.

• Bachelor of Science

Faculty of Physics, University of Bucharest, Magurele

2015 - 2018

During the bachelor's degree I attended a series of courses in the field of nuclear physics, elementary particles and astroparticle physics that determined me to learn more about this field. Therefore, I decided to do my BSc thesis on the mysterious neutrino particles. During the bachelor's project I gained knowledge in the field of neutrino physics (neutrino history, neutrino flavors, interaction with matter, detection methods, experiments) and I learned how a Time Projection Chamber works, by developing a small TPC test model.

WORK EXPERIENCE

- **Scientific Research Assistant**

Institute of Space Science - A subsidiary of INFLPR, Magurele

Dec 2018 - Present

- Astroparticle and High-Energy Physics
- Exotic particles study, Monte Carlo simulation of nuclearites
- Simulations for the study of the evolution of the first populations of super-massive black holes
- KM3NeT Collaboration member
- MoEDAL member

- **Intern**

Faculty of Physics, University of Bucharest, Magurele

2017 - 2018

- I acquired knowledge regarding the detection methods of neutrinos and the detectors used in neutrino physics
- I learnt about the detector used in the Deep Underground Neutrino Experiment (DUNE)
- I developed a small Time Projection Chamber (TPC) with gas for laboratory studies

- **Intern**

National Institute of Materials Physics, Magurele

2016 - 2017

- Compositional analysis and chemical bounds with surface sensitivity using photon spectroscopy (XPS)
- I participated to the experimental measurements of the probes, the results interpretation, the identification of the elements and the concentration determination

PUBLICATIONS

- A. Păun*, G. Păvălaș and V. Popa on behalf of the KM3NeT Collaboration, *Search for nuclearites with the KM3NeT detector*, PoS(ICRC2021)1152
- D. Calvo* et al. (KM3NeT Collaboration), *Architecture and Performances of the KM3NeT Front-end Firmware*, Journal of Astronomical Telescopes, Instruments and Systems, 7 (2021) 1, 016001
- S. Aiello et al. (KM3NeT Collaboration), *The KM3NeT potential for the next core-collapse supernova observation with neutrinos*, The European Physical Journal C 81, 445 (2021)
- S. Aiello et al. (KM3NeT Collaboration), *Deep-sea deployment of the KM3NeT neutrino telescope detection units by self-unrolling*, 2020 JINST 15 P11027
- C. Distefano* et al. (KM3NeT Collaboration), *gSeaGen: The KM3NeT GENIE-based code for neutrino telescopes*, Computer Physics Communications, 256 (2020) 107477
- T. Eberl* et al. (KM3NeT Collaboration), *Event reconstruction for KM3NeT/ORCA using convolutional neural networks*, Journal of Instrumentation, 15 (2020) P10005

INTERNATIONAL CONFERENCES

- A. Păun*, G. Păvălaș and V. Popa on behalf of the KM3NeT Collaboration (2021) *Search for nuclearites with the KM3NeT detector*, **International Cosmic-Ray Conference (ICRC2021)**, Berlin, Germany, 12-23 Iulie 2021 (Online) Parallel Session (Poster)
- A. Păun (2021) *Search for nuclearites with the KM3NeT detector*, **XXXII International seminar of Nuclear and Subnuclear physics "Francesco Romano"**, Otranto, Italy, 7-11 Iunie 2021 (Online) (Presentation)
- A. Păun*, G. Păvălaș and V. Popa on behalf of the KM3NeT Collaboration (2021) *Search for nuclearites with the KM3NeT detector*, **Very Large Volume Neutrino Telescope Workshop (VLVnT2021)**, Valencia, Spain, 18-21 Mai 2021 (Online) - Parallel Session (Presentation)
- A. Păun (2019) *Neutrino capture on beta decaying nuclei as method to detect relic neutrinos - general considerations*, **VIII International Pontecorvo Neutrino Physics School**, Sinaia, Romania, 1-10 September (Poster)

NATIONAL CONFERENCES

- A. Păun*, G. Păvălaș and V. Popa on behalf of the KM3NeT Collaboration (2021) *Search for nuclearites with the KM3NeT detector*, **Bucharest University Faculty of Physics 2019 Meeting (SACS FF-UB 2021)**, Măgurele, Romania, 18 Iunie 2021 (Online) - Presentation

A. Păun, G. E. Păvălaș (2019) *Experimental searches for nuclearites*, **Bucharest University Faculty of Physics 2019 Meeting**, Nuclear and Elementary Particles Physic, Măgurele, Romania, 21-22 Iunie - Presentation

M. Pârvu, A. Păun, I. Lazanu (2018) *Development of a small Time Projection Chamber test detector model with gas for laboratory studies*, **Bucharest University Faculty of Physics 2018 Meeting**, Nuclear and Elementary Particles Physic, Măgurele, Romania, 21-22 Iunie - Presentation