PERSONAL INFORMATION

Alexandra-Ionela Stefanescu (former Chilug)

Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH),
30 Reactorului, Măgurele, jud. Ilfov, 077125 (România)

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Sex Female | Date of birth 23/10/1989 | Nationality Romanian

WORK EXPERIENCE

January 2017 - Present

Scientific Research Assistant

Department of Nuclear Physics,

"Horia Hulubei" National Institute for Physics and Nuclear Engineering,

30 Reactorului, PO 077125, Magurele, Ilfov – Romania

http://www.nipne.ro

- Participation at the preparation and development of nuclear physics experiments for astrophysics, both at IFIN-HH own accelerators and in approved experiments at large facilities in institutes outside the country.
- Participation in the design and realization of experimental installations, in the elaboration of measurement procedures and at data analysis.
- Developing simulation procedures for the above experiments.
- Data analysis for experiments using own or standard programs or procedures in nuclear physics.
- Participation in the internal and international collaborations of the team.

Business or sector Research

November 2019 – October 2020

International Program Associate (IPA) Student (long term)

Spin-Isospin Laboratory,

RIKEN, Nishina Center for Accelerator-Based Science

2-1 Hirosawa, Wako, Saitama 351-0198, Japan

http://www.riken.jp/en/

- Preparation of the H424 experiment at HIMAC, Chiba
- data analysis of NP1412-SAMURAI29 experiment

Business or sector Research

April 2018 - June 2018

Student Trainee in RIKEN

Spin-Isospin Laboratory,

RIKEN, Nishina Center for Accelerator-Based Science

2-1 Hirosawa, Wako, Saitama 351-0198, Japan

http://www.riken.jp/en/

- Preparation of the Oxygen18 experiments campaign at SAMURAI

Business or sector Research

July 2017 – December 2017

International Program Associate (IPA) Student (short term)

Spin-Isospin Laboratory,

RIKEN, Nishina Center for Accelerator-Based Science

2-1 Hirosawa, Wako, Saitama 351-0198, Japan

http://www.riken.jp/en/

- Preparation and Inside training for NP1412-SAMURAI29 experiment and for HIMAC test experiments

Business or sector Research

February 2015 – December 2016

Physicist

Department of Nuclear Physics,

"Horia Hulubei" National Institute for Physics and Nuclear Engineering,

30 Reactorului, PO 077125, Magurele, Ilfov – Romania

http://www.nipne.ro

- Participation at the preparation and development of nuclear physics experiments for astrophysics, both at IFIN-HH own accelerators and in approved experiments at large facilities in institutes outside the country.
- Participation in the design and realization of experimental installations, in the elaboration of measurement procedures and at data analysis.
- Developing simulation procedures for the above experiments.
- Data analysis for experiments using own or standard programs or procedures in nuclear physics.

Participation in the internal and international collaborations of the team in which I work.

Business or sector Research

EDUCATION AND TRAINING

October 2016 - Present

PhD. Student

"Indirect measurements in nuclear physics for astrophysics: proton breakup reactions at intermediate energies"

Domain of study: Physics – Atomic and Nuclear Interactions Physics, Elementary Particles, Astrophysics and Applications

Doctoral School of Physics - University of Bucharest, Romania

October 2012 – June 2014

Master degree,

"Analysis of the possibilities that sodium chloride rock could be used as a target for solar and supernovae neutrinos."

Domain of study: Physics – Atomic and Nuclear Interactions, Elementary Particles, Astrophysics and Applications

Faculty of Physics, University of Bucharest, 405,Atomistilor,Magurele, Ilfov county, Romania

October 2008 – June 2012

Bachelor degree,

"Aspects of detecting the massive component of dark matter in the Universe"

Domain of study: Technological Physics – Applied Engineering Sciences

Faculty of Physics, University of Bucharest, 405 Atomistilor, Magurele, Ilfov county, Romania

PERSONAL SKILLS

Mother tongue(s): Romanian

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Communication and relationship in different social and working environments
- Adaptability, Flexibility, Determination

Job-related skills

- Good ability for analysis and synthesis; ability to assimilate new information and skills.
- Good ability to work in teams for experiments preparation.

Computer skills and competences

- Basic knowledge of computer languages C++, Fortran
- Experimental data processing with ROOT Cern, OriginLab, MCA2Analyzer CAEN, Radware, Gaspware, Maestro Ortec.
- Experimental data simulation in Geant4 and LISE++.
- Good knowledge of Microsoft Office tools.
- Operation systems used so far for installing programs needed for data analysis: Ubuntu16, MacOs Catalina, Windows8

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Proficient user	Independent user	Independent user	Proficient user

Levels: Basic user - Independent user - Proficient user
Digital competences - Self-assessment grid

Driving licence

B, B1, AM

ADDITIONAL INFORMATION

Publications

- **A.I. Stefanescu** et al., "*Silicon tracker array for RIB experiments at SAMURAI*", Eur. Phys. J. A 58, (2022) 223.
- N.T. Zhang ... **A.I. Chilug** et al., "*Constraining the $^{12}C+^{12}C$ astrophysical S-factors with the $^{12}C+^{13}C$ measurements at very low energies*", Phys. Lett. B 801 (2020), 135170.
- D. Tudor, L. Trache, **A.I. Chilug** et al, "*A facility for direct measurements for nuclear astrophysics at IFIN-HH - a 3 MV tandem accelerator and an ultra-low background laboratory*", Nucl. Instrum. Methods Phys. Res. A, 953 (2020), 163178.
- L. Stuhl, ..., **A.I. Chilug** et al., "*Study of spin-isospin responses of radioactive nuclei with the background -reduced neutron spectrometer, PANDORA*", Nucl. Instrum. Methods Phys. Res. B, 463 (2020) 189-194.
- **A. I. Chilug**, et al., "*Study of the ^{9}C breakup through NP1412-SAMURAI29R1 experiment*", AIP Conference Proceedings 2076, 060001 (2019);
- I. C. Stefanescu, L. Trache, **A. I. Chilug**, et al., "*Decay spectroscopy as a tool for nuclear astrophysics*", AIP Conference Proceedings 2076, 060008 (2019);
- **A.I. Chilug** et al., "*Breakup of ^{9}C studied at SAMURAI*", RIKEN Accel. Prog. Rep. 52 (2019)
- **A.I. Chilug** et al., "*Nuclear Breakup and Coulomb Dissociation of ^{9}C nucleus studied at RIBF RIKEN*", Proceedings of 13th International Conference on Nucleus-Nucleus Collisions, 10.7566/JPSCP.32.010057.
- D. Tudor, **A. I. Chilug**, I. C. Stefanescu, et al., "*Experimental study of the $\alpha+ ^{64}Zn$ reaction in the Gamow region*", AIP Conference Proceedings 2076, 060010 (2019);
- A. Petrovici, O. Andrei, **A.I. Chilug**, „*Exotic phenomena in medium mass $N \simeq Z$ nuclei within the beyond -mean-field approach*", 2018 Phys. Scr. 93 114001;
- I. Stefanescu, **A.I. Chilug** et al, „*In-beam measurements of $^{13}C+^{12}C$ fusion reaction cross section at energies around and below Coulomb barrier*", AIP Conference Proceedings 1852, 080011 (2017);
- D. Tudor, **A. I. Chilug** et al, „*Activation measurements of $^{13}C+^{12}C$ fusion cross section at deep sub-barrier energies in IFIN-HH*", AIP Conference Proceedings 1852, 080012 (2017);
- D. Tudor, **A.I. Chilug**, et al., "*Experimental study of the $^{13}C+^{12}C$ fusion reaction at deep sub-barrier energies*", Journal of Physics: Conference Series 703 (2016) 012028.

Publications

- **Alexandra Chilug**, "*Estimation of the radioactivity induced by cosmic rays in the rock salt cavern of an underground laboratory*", Romanian Reports in Physics (Vol.66, No.4, P1200-1206, 2014);
- I. Lazanu, **A.I.Chilug**, "*Superheated droplet detectors: Theoretical Model and Tests to Neutron Field*", Romanian Reports in Physics (Vol.64, No.4, 2012);
- S. Simon, I.B. Guster, **A.I. Chilug** et al., " Interactive evaluation of the students in building a scientific project", EDULEARN12 Proceedings (2012), pp. 4912-4919, ISBN: 978-84-695-3491-5;

Schools/Conferences/ Presentations

- **A.I. Chilug**, et al., "Proton breakup of ^{9}C at intermdiate energies", oral presentation at Carpathian Summer School of Physics 2020 (CSSP20, August 2021, Sinaia, Romania)
- **A. I. Chilug**, et al., "Nuclear Breakup and Coulomb Dissociation of ^{9}C Nucleus studied at RIBF RIKEN", at 13th International Conference on Nucleus-Nucleus Collisions, Omiya Saitama, Japan (December 2018).
- **A. I. Chilug**, et al.,"Study of ^{9}C breakup through NP1412SAMURAI29R1 experiment", at Indirect Methods in Nuclear Astrophysics Workshop, ECT* Trento, Italy, (November 5--9, 2018).
- **A. I. Chilug**, et al., "^{9}C breakup measurement through NP1412-SAMURAI29R1 experiment", at Nuclear physics in stellar explosions Workshop, ATOMKI, Debrecen, Hungary, (Sept.12-14, 2018)
- **A. I. Chilug**, et al., "Study of the ^{9}C breakup through NP1412-SAMURAI29R1 experiment" at Carpathian Summer School of Physics 2018 (CSSP18, July 2018, Sinaia, Romania).
- **A. I. Chilug** "Study of the ^{9}C breakup through NP1412-SAMURAI29R1 experiment (simulations and test experiments)" at 15th Rußbach School on Nuclear Astrophysics, (March 2018), Rußbach , Austria.
- **A.I. Chilug**, "Measurement of the ^{58}Ni(α,γ)^{62}Zn fusion reaction cross section at deep sub-barrier energies relevant for nuclear astrophysics", at the 14th Russbach School on Nuclear Astrophysics, Russbach, Austria, March 12-18, 2017
- **A. I. Chilug**, et al., "Experiments in IFIN-HH to determine reaction cross sections for the ^{13}C+^{12}C system through direct measurements at very low energies (II)", at 13th Russbach School on Nuclear Astrophysics", (March 6-12, 2016), Rußbach, Austria.
- **Alexandra Chilug**, "Estimation of the radioactivity induced by cosmic rays in the rock salt cavern of an underground laboratory", at the Scientific Session of the Faculty of Physics (Bucharest, 21-22 June 2013, Romania).
- I. Lazanu, **A.I.Chilug**, "Superheated droplet detectors: Theoretical Model and Tests to Neutron Field", at the Scientific Session of the Faculty of Physics(Bucharest, 17th of June 2011, Romania)

- Participation at Summer Student Practice in JINR Fields of Research, ended with the oral presentation: "Non-destructive analysis of element and isotope composition by neutron spectroscopy methods" (01-22 July 2012, Dubna, Russia)
- Participation at Summer Student Practice in JINR Fields of Research, ended with the oral presentation: "Position sensitive scintillation detectors for trigger system in the space experiment NUCLEON" (13-31 July 2011, Dubna, Russia)