

UNIVERSITÀ DEGLI STUDI DI MILANO

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Simone Bottoni

CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	BOTTONI
NOME	SIMONE
DATA DI NASCITA	30/09/1986

Il curriculum, composto da 23 pagine, è riportato a partire dalla pagina seguente.

Data

16/03/2021

Luogo

Milano

Personal information

Name Simone Bottoni
Birth Milano, 30/09/1986

Education and scientific career

Mar. 2017 Postdoctoral fellow in nuclear physics (type A) at Università degli Studi di Milano (I).
Feb. 2021
Feb. 2017 Employee at CAEN S.p.A. (I) based at Institut Laue-Langevin (F) for technical support to nuclear physics experiments.
Apr. 2015 Postdoctoral fellow in nuclear physics at Argonne National Laboratory (U.S.A.).
Dec. 2016
Nov. 2011 PhD student in physics at Università degli Studi di Milano (I) and KU Leuven (B).
Oct. 2014
2009-2011 Master student in physics at Università degli Studi di Milano (I).
2005-2009 Bachelor student in physics at Università degli Studi di Milano (I).

Degrees

Joint PhD Joint PhD degree in physics at Università degli Studi di Milano (I) and KU Leuven (B)
26 Jan. 2015 **Thesis:** Cluster-transfer reactions with radioactive beams: a spectroscopic tool for neutron-rich nuclei.
Advisors: Prof. S. Leoni, Prof. R. Raabe (KU Leuven), Prof. A. Bracco
Master Master degree in physics at Università degli Studi di Milano (I) - 110/110 cum laude
2011 **Thesis:** Reaction dynamics and gamma spectroscopy studies of Ne isotopes by the heavy ion reactions ^{22}Ne on ^{208}Pb at 130 and 152 MeV.
Advisors: Prof. S. Leoni, Prof. A. Bracco, Dott. G. Benzoni
Bachelor Bachelor degree in physics at Università degli Studi di Milano (I) - 104/110
2009 **Thesis:** Spettroscopia gamma discreta in nuclei esotici ricchi di neutroni con $A \approx 50$.
Advisors: Prof. S. Leoni, Prof. A. Bracco
High school High school diploma at Liceo Scientifico Statale Vittorio Veneto, Milano (I) - 98/100
2005

Main research areas

- Experimental nuclear physics.
- Investigation of nuclear structure properties of nuclei produced moving away from stability.
- γ and particle spectroscopy with complex instrumentation based on segmented detection arrays (semiconductors and scintillators, including large arrays such as AGATA).
- Monte Carlo simulations for optimization of experimental setups (in particular for the AGATA array).
- Nuclear reaction calculations for experiment planning and data interpretation.

■ Bibliometry

Publications 99

Citations 741

h-index 17

Among the publications:

Nature: **2**

Phys. Rev. Lett: **7**

Phys. Lett. B: **8**

Phys. Rev. C: **34**

Phys. Scripta: **2**

Eur. Phys. Lett.: **1**

Eur. Phys. J. A: **1**

Journ. Instr.: **1**

Nucl. Inst. Meth. A: **1**

ASN Application submitted in November 2020 (02/A1) - under evaluation:

Publications in 5 years: 57 - threshold: 23

Citations in 10 years: 701 - threshold: 650

h-index in 10 years: 16 - threshold: 14

■ Working groups and responsibilities

2020 - pres. Member of the management board of the GRIT project.

2020 - pres. Group leader of the working group for physics simulations of the GRIT project, a new type of compact, high granularity Silicon array for the detection of charged particles produced in direct reactions.

2019 - pres. Member of the AGATA@LNL working group for performances, simulations and commissioning of the AGATA HPGe γ array at Laboratori Nazionali di Legnaro.

2018 - 2021 Elected delegate of postdoctoral researches of the Physics Department of Università degli Studi di Milano and member of the Physics Department Board.

■ Leaderships in experimental projects

Total number of proposals: **11**

September Spokesperson for beam time request

2020 Subject: Complete low-spin spectroscopy of ^{83}Se as a benchmark for large scale shell model calculations

Laboratory: ILL, Grenoble (F)

Status: approved and run - analysis under my responsibility

October Spokesperson for beam time request

2019 Subject: Studying the structure of ^{69}Cu by ($^7\text{Li}, 2\alpha$), one-proton-transfer reactions at sub-barrier energies

Laboratory: IFIN-HH, Bucharest (RO)

Status: approved

- September 2018** Spokesperson for beam time request
Subject: Characterization of enriched ^6LiF and ^7LiF targets
Laboratory: MLZ, Munich (D)
Status: approved and run - analysis under my responsibility
- September 2018** Spokesperson for beam time request
Subject: Investigating hole-core coupled states in ^{131}Sn by lifetime measurements
Laboratory: ILL, Grenoble (F)
Status: approved and run - analysis under my responsibility
- February 2018** Spokesperson for beam time request
Subject: Study of superdeformed structures and shape coexistence in ^{42}Ca by (n,γ) reactions on a radioactive ^{41}Ca target
Laboratory: ILL, Grenoble (F)
Status: approved and run - analysis under my responsibility
- February 2018** Spokesperson for beam time request
Subject: Precision measurement of M1 transition strengths in ^{133}Sb
Laboratory: ILL, Grenoble (F)
Status: approved and run - analysis under my responsibility
- October 2017** Spokesperson for beam time request
Subject: Understanding collectivity and shape transitions in Zn isotopes across $N=40$ by measuring γ -ray decays and lifetimes of low-lying off-yrast states in $^{72}\text{Zn}_{42}$
Laboratory: IFIN-HH, Bucharest (RO)
Status: approved and run - analysis under my responsibility
- February 2017** Spokesperson for beam time request
Subject: Search for quasi-particle-phonon coupled states in mid-shell Ca isotopes
Laboratory: ILL, Grenoble (F)
Status: approved and run - analysis under my responsibility
- January 2017** Spokesperson for beam time request
Subject: Tracking shape evolution beyond $N=60$ in Sr and Zr isotopes
Laboratory: ALTO, Orsay (F)
Status: approved and run - analysis under my responsibility
- September 2016** Spokesperson for beam time request
Subject: Microscopic origin of Quantum Phase Transitions in the shape of neutron-rich nuclei in the $A\sim 100$ region
Laboratory: Argonne National Laboratory, Argonne (U.S.A.)
Status: approved with high priority
- December 2015** Spokesperson for beam time request
Subject: Multi-nucleon transfer reactions in inverse kinematics with Gammasphere and the FMA
Laboratory: Argonne National Laboratory, Argonne (U.S.A.)
Status: approved and run - analysis under my responsibility

Total number of Letters of Intent: (projects in preparation) **3**

- July 2020** Spokesperson of the Letter of Intent
Subject: Digging out protons to unearth their impact on the structure of neutron-rich nuclei by (t,α) reactions in inverse kinematics
Laboratory: ISOLDE - CERN, Geneva (CH)

- March** Spokesperson of the Letter of Intent
2018 Subject: Large- and positive-Q-value proton-transfer reactions with radioactive targets for nuclear structure studies
Laboratory: LNL, Legnaro, Padova (I)
- March** Spokesperson of the Letter of Intent
2018 Subject: Investigating the role of the proton $g_{9/2}$ orbital in the structure of ^{69}Cu
Laboratory: LNL, Legnaro, Padova (I)

Participation in experimental projects

- AGATA** n° of experiments: 8
Laboratories: LNL (I), GANIL (F)
Ancillary detectors: HECTOR+, PARIS, MUGAST, PRISMA, VAMOS
- GALILEO** n° of experiments: 2
Laboratories: LNL (I)
Ancillary detectors: SPIDER, TRACE
- GRETINA** n° of experiments: 7
Laboratories: ANL (U.S.A.), MSU-NSCL (U.S.A)
Ancillary detectors: CHICO2, Phoswitch Wall, FMA, S800
- GAMMA** n° of experiments: 11
SPHERE **Laboratories:** ANL (U.S.A.)
Ancillary detectors: CHICO2, Phoswitch Wall, FMA, FATIMA
- FMA** n° of experiments: 2
Laboratories: ANL (U.S.A.)
- GAMPE** n° of experiments: 1
Laboratories: LNL (I)
Ancillary detectors: HPGe detectors
- FIPPS** n° of experiments: 12
Laboratories: ILL (F)
Ancillary detectors: LaBr₃ detectors
- ROSPHERE** n° of experiments: 12
Laboratories: IFIN-HH (RO)
Ancillary detectors: LaBr₃ detectors, Si detectors
- PF1B** n° of experiments: 3
Laboratories: ILL (F)
Ancillary detectors: HPGe detectors, LaBr₃ detectors, Si detectors

LOHEN	n° of experiments: 3
GRIN	Laboratories: ILL (F) Ancillary detectors: HPGe detectors, LaBr ₃ detectors, IC chamber
KRATTA	n° of experiments: 3
PARIS	Laboratories: CCB (PL)
HELIOS	n° of experiments: 4 Laboratories: ANL (U.S.A.) Ancillary detectors: scintillator detectors
CARIBU	n° of experiments: 3 Laboratories: ANL (U.S.A.) Ancillary detectors: HPGe detectors, LaBr ₃ detectors
MINIBALL	n° of experiments: 3 Laboratories: ISOLDE (CERN) Ancillary detectors: T-REX
νBall	n° of experiments: 5 Laboratories: ALTO (F) Ancillary detectors: PARIS
PISOLO	n° of experiments: 2 Laboratories: LNL (I)

Invited talks

Total number of invited talks: **7**

March	Subject: Structure of Ca isotopes between doubly closed shells
2021	Seminar: University of Warsaw Location: On line
September	Subject: Structure of Ca isotopes between doubly closed shells
2020	Conference: Congresso Nazionale della Società Italiana di Fisica - SIF20 Location: On line
September	Subject: Hybridization phenomena in odd-mass neutron-rich nuclei
2019	Conference: XXVI nuclear physics workshop Location: Kazimierz Dolny (PL)
October	Subject: Valence particle/hole – core excitations couplings: new experimental investi-
2017	gations and novel theoretical approaches Conference: Selected Topics in Nuclear and Atomic Physics 2017 Location: Fiera di Primiero (I)

- June 2017** **Subject:** Nuclear structure studies with heavy-ion reactions and GRETINA
Conference: Gordon Research Conference on Nuclear Chemistry
Location: New London (U.S.A)
- December 2016** **Subject:** Angular distributions of tracked gamma-rays produced in direct reactions between heavy ions
Conference: First AGATA-GRETINA tracking arrays collaboration meeting
Location: Argonne National Laboratory (USA)
- January 2016** **Subject:** Nuclear structure studies around N=40 with heavy-ion transfer reactions
Seminar: Heavy-ion discussions
Location: Argonne National Laboratory (USA)

--- Contributed talks

Total number of contributed talks: **24**

- July 2019** **Subject:** Exploring the structure of odd-mass isotopes around the ^{132}Sn exotic, doubly-magic nucleus
Conference: International Nuclear Physics Conference (INPC 2019)
Location: Glasgow (UK)
- April 2019** **Subject:** Search for quasisparticle states in ^{45}Ca
Conference: IFIN-HH-ILL workshop
Location: Bucharest (RO)
- September 2018** **Subject:** Valence particle/hole core couplings in neutron-rich, exotic nuclei
Conference: Nucleus Nucleus Collision 2018
Location: Tokyo (J)
- August 2018** **Subject:** Valence particle/hole core couplings in neutron-rich, exotic nuclei
Conference: LIII Zakopane conference on nuclear physics
Location: Zakopane (PL)
- February 2018** **Subject:** Spectroscopy of valence particle nuclei around ^{48}Ca and ^{132}Sn : recent results in Experiment and Theory
Conference: 4th Topical Workshop on Modern Aspects in Nuclear Structure
Location: Bormio (I).
- September 2017** **Subject:** The Hybrid Configuration Mixing Model
Conference: Prospects on the microscopic description of odd mass nuclei and other multi-quasiparticle excitations with beyond-mean-field and related methods
Location: ECT*, Trento (I)
- September 2017** **Subject:** Valence particle/hole – core excitations couplings: new experimental investigations and novel theoretical approaches
Conference: Congresso Nazionale della Società Italiana di Fisica - SIF17
Location: Trento (I)
- September 2017** **Subject:** Valence particle/hole – core excitations couplings: new experimental investigations and novel theoretical approaches
Conference: XXXV Mazurian Lakes Conference on Physics
Location: Piaski (PL)
- May 2017** **Subject:** Valence particle/hole – core excitations couplings: new experimental investigations and novel theoretical approaches
Conference: 6th Workshop on Nuclear Level Density and Gamma Strength
Location: Oslo (N)

- March 2017** **Subject:** Valence particle/hole – core excitations couplings: new experimental investigations and novel theoretical approaches
Conference: 6th Workshop on Nuclear Fission and Spectroscopy of Neutron-Rich Nuclei
Location: Chamrousse (F)
- October 2016** **Subject:** Single-neutron states and the role of the $\nu g_{9/2}$ orbital in ^{71}Zn
Conference: 2016 Fall meeting of the APS division of nuclear physics
Location: Vancouver (CDN)
- July 2016** **Subject:** Single-neutron states and the role of the $\nu g_{9/2}$ orbital in ^{71}Zn
Conference: Direct reaction with exotic beams (DREB16)
Location: Halifax (CDN)
- October 2015** **Subject:** Single-neutron states and the role of the $\nu g_{9/2}$ orbital in ^{71}Zn
Conference: 2015 Fall meeting of the APS division of nuclear physics
Location: Santa Fe (USA)
- October 2015** **Subject:** Single-neutron states and the role of the $\nu g_{9/2}$ orbital in ^{71}Zn
Conference: Frontier of γ -ray spectroscopy (Gamma15)
Location: Osaka (J)
- October 2014** **Subject:** Cluster-transfer reactions with radioactive beams: a spectroscopic tool for neutron-rich nuclei
Conference: MINIBALL Workshop
Location: Orsay (F)
- September 2014** **Subject:** Reazioni di trasferimento di cluster di nucleoni con fasci radioattivi
Conference: Congresso nazionale della società italiana di fisica - SIF14
Location: Pisa (I)
- July 2014** **Subject:** Cluster-transfer reactions with radioactive ^{98}Rb and ^{98}Sr beams on a ^7Li target
Conference: Direct reaction with exotic beams (DREB14)
Location: Darmstadt (D)
- May 2014** **Subject:** Nuclear structure studies with heavy ion transfer reactions: present status and perspectives with stable and radioactive beams
Conference: Low-energy reaction dynamics of heavy-ions and exotic nuclei workshop
Location: ECT*, Trento (I)
- November 2013** **Subject:** Cluster-transfer reactions with radioactive ^{98}Rb and ^{98}Sr beams on a ^7Li target
Conference: ISOLDE workshop
Location: CERN (CH)
- October 2013** **Subject:** Cluster-transfer reactions with radioactive ^{98}Rb and ^{98}Sr beams on a ^7Li target
Conference: MINIBALL workshop
Location: CERN (CH)
- September 2013** **Subject:** γ spectroscopy of neutron-rich nuclei with $A \approx 100$ produced by cluster-transfer reactions at REX-ISOLDE
Conference: XXXIII Mazurian Lakes conference on physics
Location: Piaski (PL)
- June 2013** **Subject:** Reaction dynamics and γ spectroscopy of Ne isotopes by the heavy ion reaction $^{22}\text{Ne} + ^{208}\text{Pb}$
Conference: International nuclear physics conference 2013 - INPC13
Location: Firenze (I)

- August 2012** **Subject:** Reaction dynamics and γ spectroscopy of Ne isotopes by the heavy ion reaction $^{22}\text{Ne}+^{208}\text{Pb}$
Conference: XLVII Zakopane conference on nuclear physics
Location: Zakopane (PL)
- June 2012** **Subject:** Reaction dynamics and γ spectroscopy of Ne isotopes by the heavy ion reaction $^{22}\text{Ne}+^{208}\text{Pb}$
Conference: 13th International conference on nuclear reaction mechanisms
Location: Varenna (I)

--- **Posters**

Total number of posters: **1**

- July 2019** **Subject:** Exploring the structure of odd-mass isotopes around the ^{132}Sn neutron-rich nucleus (poster)
Conference: XXXVI Mazurian Lakes Conference on Physics
Location: Piaski (PL)

--- **Teaching**

- Dec - Feb 2020-2021** Art. 45 for assistant and tutor
Hours: 40
Course: Physics 1
Institute: Università degli Studi di Milano (I)
Department: Earth sciences
- Dec - Mar 2019-2020** Art. 45 for assistant and tutor
Hours: 40
Course: Physics 1
Institute: Università degli Studi di Milano (I)
Department: Earth sciences
- May 2019** Lecturer
Hours: 4
Course: Nuclear Physics PhD course
Subject: Direct reactions with FRESCO
Institute: Università degli Studi di Padova (I)
Department: Physics
- Dec - Mar 2018-2019** Art. 45 for assistant and tutor
Hours: 40
Course: Physics 1
Institute: Università degli Studi di Milano (I)
Department: Earth sciences
- Dec - Mar 2017-2018** Art. 45 for assistant and tutor
Hours: 40
Course: Physics 1
Institute: Università degli Studi di Milano (I)
Department: Earth sciences

Mar - Jun 2017 Art. 45 for assistant and tutor
Hours: 40
Course: General physics
Institute: Università degli Studi di Milano (I)
Department: Biological sciences

July 2016 Supportive lecturer
Hours: 2
Course: Series of lectures for undergraduate students
Subject: Nuclear structure studies with heavy-ion transfer reactions
Institute: Argonne National Laboratory (U.S.A.)
Department: Physics

October 2014 Supportive lecturer
Hours: 4
Course: Interaction of radiation with matter
Subject: γ -ray detection systems
Institute: Università degli Studi di Milano (I)
Department: Physics

Supervising thesis

Total number of bachelor thesis: **9**

September 2020 Co-supervisor of bachelor thesis
Subject: Misure di vite medie nel nucleo ^{131}Sb prodotto con reazioni di fissione indotta da neutroni termici
Candidate: N. Brancadori
Supervisors: S. Leoni, S. Bottoni

May 2020 Co-supervisor of bachelor thesis
Subject: γ -ray spectroscopy studies of ^{42}Ca by (n,γ) reactions on a radioactive ^{41}Ca target
Candidate: L. Foletto
Supervisors: S. Leoni, S. Bottoni

December 2019 Co-supervisor of bachelor thesis
Subject: Decadimento γ nel continuo del nucleo ^7Li popolato tramite reazioni di cattura neutronica su bersaglio di ^6LiF con supporto di Mylar
Candidate: M. Micheli
Supervisors: S. Leoni, S. Bottoni

October 2019 Co-supervisor of bachelor thesis
Subject: Studio della struttura del nucleo ^{65}Ni a basso spin mediante tecniche di spettroscopia γ
Candidate: F. Rallo
Supervisors: S. Leoni, S. Bottoni

February 2019 Co-supervisor of bachelor thesis
Subject: Studio del decadimento gamma nel continuo del nucleo ^7Li
Candidate: M. Zanol
Supervisors: S. Leoni, S. Bottoni

- June** Co-supervisor of bachelor thesis
2018 **Subject:** Study of low-lying structures in ^{72}Zn by γ -ray spectroscopy
Candidate: M. Lazzari
Supervisors: S. Leoni, S. Bottoni
- October** Co-supervisor of bachelor thesis
2017 **Subject:** Studio della struttura del nucleo ^{69}Cu tramite spettroscopia γ e reazioni di trasferimento tra ioni pesanti
Candidate: F. Castellano
Supervisors: S. Leoni, S. Bottoni
- October** Co-supervisor of bachelor thesis
2017 **Subject:** Spettroscopia γ dei frammenti di fissione ^{131}Sn e ^{132}Sn
Candidate: L. Gatti
Supervisors: S. Leoni, S. Bottoni
- March** Co-supervisor of bachelor thesis
2017 **Subject:** Misura indiretta del decadimento γ nel continuo del ^7Li
Candidate: G. Calvi
Supervisors: S. Leoni, S. Bottoni

Total number of master thesis: **5**

- January** Co-supervisor of master thesis
2021 **Subject:** Studio del decadimento gamma nel continuo del nucleo ^8Be
Candidate: E. Albanese
Supervisors: S. Leoni, S. Bottoni
- December** Co-supervisor of master thesis
2020 **Subject:** Studio della struttura degli isotopi di Niobio di massa $A=100$ prodotti con reazioni di fissione indotta da neutroni termici
Candidate: M. Zanol
Supervisors: S. Leoni, S. Bottoni
- March** Co-supervisor of master thesis
2019 **Subject:** Study of low-spin structures in ^{45}Ca by neutron-capture reactions and γ -ray spectroscopy
Candidate: L. Gatti
Supervisors: S. Leoni, S. Bottoni
- September** Co-supervisor of master thesis
2018 **Subject:** Lifetime measurements in neutron-rich Sb and Y isotopes produced by thermal-neutron induced fission reactions
Candidate: A. Filippini
Supervisors: S. Leoni, S. Bottoni
- April** Tutor of master thesis
2018 **Subject:** Detailed spectroscopy of ^{65}Ni : searching for shape coexistence in an odd nucleus
Candidate: S. Fracassetti
Supervisor: S. Leoni

Workshops and Conferences organization

- February** Organizing support
2020 **Conference:** V Topical Workshop on Modern Aspects in Nuclear Structure
Location: Bormio (I)
- March** Local organizer
2019 **Conference:** Workshop AGATA@LNL for stable beams
Location: LNL - Padova (I)
- September** Organizing support
2018 **Conference:** NUSTAR week 2018
Location: Milano (I)
- February** Scientific secretary
2018 **Conference:** IV Topical Workshop on Modern Aspects in Nuclear Structure
Location: Bormio (I)
- September** Local organizer
2017 **Conference:** XVIII AGATA week
Location: Milano (I)

Referee of peer-reviewed journals and editing

Total number of referee reports: **18**

- 2020 - pres.** Nuovo Cimento (SIF): 3 reports
2019 - pres. Nuclear Science and Techniques (Springer): 1 report
2019 - pres. Europhysics Letter (IOP and SIF): 1 report
2018 - pres. Nuclear Physics A (Elsevier): 5 reports
2016 - pres. Physical Review C (APS): 5 reports
2016 - pres. Physical Review Letters (APS): 3 reports
- January** Editing ERINDA (European Research Infrastructure for Nuclear Data Applications)
2014 workshop conference proceeding
- December** Editing Varenna conference proceeding 13th International Conference on Nuclear Reac-
2012 tion Mechanisms

Outreach

- February** Participation in the project "Volontari per l'Educazione" promoted by Università degli
2021 Studi di Milano, other Italian's Universities and Save the Children to counteract the early school leaving of students at risk of learning loss due to the Covid-19 pandemic.
- November** Promoter and organizer of the event "Viaggio dai nuclei alle stelle" aimed at spreading
2020 nuclear physics concepts and discoveries among the population. The project has been selected upon review to represent Università degli Studi di Milano at Meet Me Tonight 2020, within the European Researches' Night.

Computer skills

OS	Windows, Linux, Mac OS X
Programm.	Office, C, C++, Fortran, Latex
Data	GASPPWARE , RADWARE, ROOT
Analysis	Origin, QtiPlot, gnuplot, XMgrace
Simulations	GEANT4, SRIM
Nuclear Reactions	LISE++, FRESCO, PTOLEMY, TWOFN, CASCADE, GRAZING
Nuclear Structure	ANTOINE, CENS, SKYRME_RPA
Calculations	MATHEMATICA

Language skills

Italian	Mother tongue
English	Advanced
French	Intermediate

Research activities

My research activity is carried out within the GAMMA collaboration of Gruppo 3 - INFN and is primarily devoted to the experimental study of the structure and dynamics of medium/heavy neutron-rich nuclei, as a function of the proton-to-neutron ratio, moving away from the valley of stability towards the neutron drip line. In particular, I am interested in the modification of shell structure, as a consequence of the unbalanced isospin, which leads to drastic changes in level ordering, shell closures, electromagnetic properties of γ decays, single-particle/hole configurations, particle/hole-core couplings and shapes of the nuclear surface.

The regions of the nuclide chart I am working on the most are those around the neutron-rich Ca ($Z=20$), Ni ($Z=28$), Zn ($Z=30$), Sn ($Z=50$) and Zr ($Z=40$) closed- and mid-shell isotopes. Moreover, I dedicate part of my activity to the study of light nuclei, such as ^7Li and ^8Be , to investigate the structure of their continuum and their radioactive decay. These studies are aimed at a comprehensive microscopic description of atomic nuclei, as many-body quantum systems, in terms of nucleon-nucleon interactions and nuclear forces. For these purposes, the interpretation of experimental data through cutting-edge theoretical models, such as large-scale shell models, beyond mean-field approaches or *ab initio* methods, is a fundamental brick of my research projects.

On top of this, part of my studies is dedicated to the experimental investigation of the mechanisms and dynamics of transfer reactions between heavy-ions (multinucleon transfers and deep-inelastic collisions), as well as one-, two-nucleon and cluster-transfer reactions involving light nuclei, such as ^2H , ^3H and ^7Li . Specifically, I am focused on direct reactions in inverse kinematics investigated by DWBA or coupled-channel models, used as tools to interpret experimental cross sections, with special attention to the effects of the continuum in the transfer process.

The exotic nuclear species I study are produced in nuclear reactions induced by stable and radioactive heavy-ion beams, as well as neutron beams, on both stable and radioactive target materials and their features are investigated by combining γ -ray and particle spectroscopy techniques. For this goal, I use state-of-the-art high-resolution, high-efficiency HPGe γ arrays, LaBr₃ scintillators, charged-particle detectors and magnetic spectrometers.

The experimental techniques I use are, among others, γ -ray coincidence techniques, lifetime measurements with DSAM, plunger and fast-timing methods, γ -ray and particle angular distributions. Typical nuclear reactions I perform are transfer reactions between heavy ions above and below the Coulomb barrier, cluster-transfer reactions, direct reactions such as (d,p) in inverse kinematics, as well as neutron capture and neutron-induced fission reactions. Moreover, I investigate the feasibility of experiments and the response of γ -ray and particle detectors by performing realistic simulations with GEANT4.

My activity is carried out in national and international laboratories worldwide, equipped with modern facilities for the production and acceleration of stable and radioactive beams, as well as nuclear reactors providing high-intensity neutron beams. These are LNL (Italy), ISOLDE (CERN), GANIL (France), ARGONNE (U.S.A), IFIN-HH (Romania), ILL (France), ALTO (France). The experimental setups I use in my studies are, for instance, AGATA, MINIBALL, GALILEO, GAMMASPHERE, ROSPHERE, FIPPS (HPGe arrays for γ -ray spectroscopy), fast LaBr₃ detectors, TRACE, MUGAST, CHICO2, T-REX, HELIOS (charged-particle detectors), PRISMA and VAMOS (magnetic spectrometers).

Personal contribution to the research activities:

- Planning of experiments under my direct responsibility as a spokesperson. This includes the study of the physics cases, the evaluation of the most suitable experimental techniques and setups and of the feasibility of the measurements, the preparation and defense of the proposals, the mounting, maintenance and calibration of the experimental setups, the monitoring of the experiment, data taking and data analysis. For the latter, in some cases I am also in charge of the development of analysis codes and methods to treat complex data taken with composite detectors for γ -ray and particle spectroscopy, as well as simulations with the GEANT4 package. These activities are documented in the "leadership" section and in the publications presented for evaluation and are summarized as follows:

(2012 - pres.) ISOLDE - CERN: I studied cluster transfer reactions with ⁹⁸Rb and ⁹⁸Sr radioactive beams and a ⁷Li target, combining γ -ray and particle spectroscopy with the MINIBALL-T-REX setup. I took care of the preparation and calibration of the setup, data taking and analysis, partially developing the code of analysis based on C++ and ROOT. I also performed DWBA calculations by using the FRESKO code to interpret the experimental cross sections, as presented in Phys. Rev. C 92, 024322 (2015) (n. 3 of presented papers) as a result of my PhD work. More recently, I presented a project to study transfer reactions in inverse kinematics using a radioactive ³H target and the ISS spectrometer. For this, I performed DWBA calculations and GEANT4 simulations to investigate the response of the experimental setup and the feasibility of the measurement.

(2012 - pres.) Laboratori Nazionali di Legnaro - Italy: I worked on different data set of multinucleon transfer reactions in the calcium and neon regions, using the CLARA γ array coupled to the PRISMA magnetic spectrometer. For this, I contributed to the calibration of the setup, the data analysis, the interpretation of the results and the preparation of the papers. Part of this activity is documented in Phys. Rev. C 85, 044301 (2012) (n. 12 of presented papers) and Phys. Rev. C 85, 064621 (2012) (n. 4 of presented papers). I also participated in the campaign of the AGATA demonstrator, taking care of the monitoring of the experiments and data taking. I gave a direct contribution to the publication Phys. Rev. Lett. 113, 012501 (2014) (n. 9 of presented papers) by performing calculations for the ¹⁷O+²⁰⁸Pb inelastic scattering, by using the FRESKO code. Finally, I presented two Letters of Intent to support the forthcoming AGATA campaign with stable beams.

(2015 - pres): Argonne National Laboratory - U.S.A: I participated in the GRETINA and GAMMASPHERE experimental campaigns, including the coupling with ancillary detectors for particle

detection and lifetime measurements, providing support to the mounting and maintenance of the experimental setups, monitoring of the experiments, data taking and analysis. I was particularly involved in the study of transfer and fusion reactions, such as the $^{48}\text{Ca}+^{70}\text{Zn}$ reaction - I was directly in charge of the analysis, data interpretation and the preparation of the paper- the $^{12}\text{C}+^{12}\text{C}$ and $^{90}\text{Zr}+^7\text{Li}$ reactions, and of the spontaneous fission of ^{252}Cf . These works are presented in the publications Phys. Lett. B 775, 271 (2017) (n. 2 of presented papers), Phys. Rev. C 97, 012801(R) (2018), Nature 554, 216 (2018) (n. 6 of presented papers), and Phys. Rev. C 100, 044309 (2019) (n. 11 of presented papers). I was also much involved in the HELIOS campaign to study transfer reactions, to which I contributed by preparing the setup, monitoring the experiments, taking data and discussing the results as in the case of Phys. Rev. Lett. 120, 122503 (2018) (n. 8 of presented papers). Finally I proposed and got approved an experiment to study the $^{98,100}\text{Zr}(d,p\gamma)$ reactions by using radioactive beams provided by the CARIBU facility.

(2017 - pres) Institute Laue-Langevin and ALTO - France: I studied different neutron-induced reactions, using HPGe γ arrays and charged particle detectors. In particular, I proposed and run a series of experiments to study the low-spin structure of Ca isotopes between doubly closed shells populated by neutron-capture reactions with the EXILL and FIPPS setups. I took care of the preparation of the proposals, the preparation and calibration of the setups, the coordination of the experiments, data taking, analysis and interpretation of the results. Part of them are published in Phys. Rev. C 103, 014320 (2021) (n. 1 of presented papers), as well as in other works to which I contributed such as Phys. Rev. C 102, 064310 (2020) and Phys. Rev. Lett. 125, 102502 (2020) (n. 7 of presented papers). I also worked on neutron-induced fission reactions of different targets, such as ^{235}U , ^{241}Pu , ^{238}U , ^{232}Th , studied in the FIPPS, EXILL, LOHENGRIN and LICORNE experimental campaigns. In this regard, I contributed to the preparation of the setups, the monitoring of the experiments and data taking and I developed part of the softwares of analysis based on C++, ROOT and the GASPPWARE package. Part of the results are published in Nature 590, 566 (2021) (n. 5 of presented papers), Phys. Rev. C 102, 054324 (2020), Phys. Rev. C 102, 064323 (2020), Phys. Lett. B 760, 273 (2016) (n. 10 of presented papers) and a publication as a first author is being finalized. Finally, I worked on an a series of experiments to study the γ -ray decay in the continuum of ^7Li populated in the $n+^6\text{Li}$ cold-neutron-capture reaction, to which I contributed by preparing and mounting the experimental setup, monitoring the experiments, taking data, developing the analysis code and analyzing the data. Also in this case, a publication as a first author is being finalized.

(2017 - pres) Horia Hulubei National Institute - Romania: I studied different transfer reactions below the Coulomb Barrier in the nickel and zinc mass regions. In particular, I contributed to the experiments with the preparation of the setup, the monitoring and data taking and data analysis. Some results are published in Phys. Rev. Lett. 125, 102502 (2020) (n. 7 of presented papers). In particular, I proposed, coordinated and run an experiment to study the structure of ^{72}Zn by γ -ray spectroscopy using the ROSPHERE array and I am in charge of the analysis, including the measurement of lifetimes with DSAM techniques and the comparison with simulations of the line shapes. I also proposed and got approved an experiment to study the structure of ^{69}Cu by using transfer reactions with the simultaneous detection of γ rays and charged particles.

- Simulations of the performances of γ arrays and charged-particle detectors and studies of the feasibility of transfer experiments with silicon detectors. This activity mainly concerns the AGATA HPGe γ array and the GRIT project, to which I contribute directly by performing simulations using GEANT4 and by studying the kinematics and the cross sections of transfer reactions using different theoretical approaches. Details of the two projects are described here below:

(2019 - pres) AGATA: I am an active member of the "performance" working group for the installation of the AGATA array at Laboratori Nazionali di Legnaro within the forthcoming experimental

campaign with stable beams starting in 2022. I contributed to the development of the simulation code based on GEANT4, in particular to implement the new scattering chamber. I performed several simulations to optimize the size of the scattering chamber and the shielding materials of the side chamber, in order to maximize the detection efficiency and minimize, at the same time, the radiation coming from the beam dump. This activity also includes a series of source and in-beam measurements to study the response of the detectors in terms of efficiency, energy resolutions, γ -ray tracking optimization, cross-talk and neutron damage corrections which will be compared with simulations, as well as the planning of the commissioning experiment.

(2020 - pres) GRIT: I am the leader of the "physics simulation" working group and member of the management board of the GRIT project. GRIT is a new type of compact, high granularity, 4π acceptance Silicon array, designed to be coupled with γ arrays, such as AGATA, to study direct reactions. This array is meant to offer superior particle identification with pulse-shape discrimination techniques by using digital electronics. I contribute to this project by performing simulations with GEANT4 of the response of the array, at the moment consisting in the preliminary configuration called MUGAST. These simulations are aimed at evaluating the feasibility of transfer experiments employing different reactions with light nuclei. To this purpose, I also contribute to the study of possible physics cases by studying reaction cross sections using DWBA or Coupled Channels methods with the FRESKO code, including couplings with core excitations, two-step processes and transfer to the continuum. As an example, I recently studied the feasibility of the $^{10}\text{Be}(d,p)$ reaction to investigate rotational bands in the continuum of ^{11}Be , combining calculations and simulations of the MUGAST setup at the LISE spectrometer at GANIL (France). This project will be submitted as a proposal to the forthcoming GANIL PAC.

- Development and extension of the Hybrid Configuration Mixing Model under the supervision of Prof. G. Colò from the theory group of Milano. In the recent years, I dedicated part of my activity to nuclear theory, contributing directly to the improvement of the Hybrid Configuration Mixing Model, designed to describe, from a microscopic point of view, couplings between collective vibrations (phonons) and non-collective core excitations of doubly magic nuclei with single-particle or hole degrees of freedom. The model is based on an Hamiltonian of Skyrme type and includes single-particle-hole states coming from Hartee-Fock calculations and core states emerging from Random Phase Approximation calculations. I contributed to this model by studying its convergence properties and by extending the formalism to the hole-core coupling case. Part of the results of this activity are published in Phys. Rev. C 103, 014320 (2021) (n. 1 of presented papers), Acta Phys. Pol. B 50, 285 (2019), EPJ Web of Conference 193, 05001 (2018) and Phys. Lett. B 760, 273 (2016) (n. 10 of presented papers) and a further publication as a first author is under review.

The synergy between experiment and theory, as well as collaborations with national and international research groups, have given me a broader perception of open questions and unsolved problems in nuclear physics, stimulating new ideas and possible future activities.

Publications in peer-reviewed journals

Total number of peer-reviewed publications: **57**

Nature: **2**

Phys. Rev. Lett: **7**

Phys. Lett. B: **8**

Phys. Rev. C: **34**

Phys. Scripta: **2**

Eur. Phys. Lett.: **1**

Eur. Phys. J. A: **1**

Journ. Instr.: **1**

Nucl. Inst. Meth. A: **1**

- February** **Authors:** J. N. Wilson et al.
2021 **Subject:** Angular momentum generation in nuclear fission
Journal: Nature 590, 566 (2021)
- February** **Authors:** A. J. Mitchell et al.
2021 **Subject:** Ground-state and decay properties of neutron-rich ^{106}Nb
Journal: Phys. Rev. C 103, 024323 (2021)
- January** **Authors:** S. Bottoni et al.
2021 **Subject:** Low-spin particle-core and hole-core excitations in $^{41,47,49}\text{Ca}$ isotopes studied by cold-neutron-capture reactions
Journal: Phys. Rev. C 103, 014320 (2021)
- December** **Authors:** R.-B. Gerst et al.
2020 **Subject:** Prompt and delayed γ spectroscopy of neutron-rich ^{94}Kr and observation of a new isomer
Journal: Phys. Rev. C 102, 064323 (2020)
- December** **Authors:** R. Avigo et al.
2020 **Subject:** Low-lying electric dipole γ -continuum for the unstable $^{62,64}\text{Fe}$ nuclei: Strength evolution with neutron number
Journal: Phys. Lett. B 811, 135951 (2020)
- December** **Authors:** C. Porzio et al.
2020 **Subject:** Detailed low-spin spectroscopy of ^{65}Ni via neutron capture reaction
Journal: Phys. Rev. C 102, 064310 (2020)
- November** **Authors:** L. W. Iskra et al.
2020 **Subject:** γ spectroscopy of the ^{96}Y isotope: Searching for the onset of shape coexistence before $N = 60$
Journal: Phys. Rev. C 102, 054324 (2020)
- November** **Authors:** M. Rocchini et al.
2020 **Subject:** g factor of the 12^+ K-isomer in ^{174}W
Journal: Eur. Phys. J. A 56, 289 (2020)
- September** **Authors:** N. Marginean et al.
2020 **Subject:** Shape Coexistence at Zero Spin in ^{64}Ni Driven by the Monopole Tensor Interaction
Journal: Phys. Rev. Lett. 125, 102502 (2020)
- April** **Authors:** D. J. Hartley et al.
2020 **Subject:** High-K, two-quasiparticle states in ^{160}Gd
Journal: Phys. Rev. C 101, 044301 (2020)
- April** **Authors:** G. Montagnoli et al.
2020 **Subject:** Fusion of $^{12}\text{C}+^{24}\text{Mg}$ far below the barrier: Evidence for the hindrance effect
Journal: Phys. Rev. C 101, 044608 (2020)
- March** **Authors:** N. Cieplicka-Oryńczak et al.
2020 **Subject:** Contrasting properties of particle-particle and hole-hole excitations in ^{206}Tl and ^{210}Bi nuclei
Journal: Phys. Lett. B 802, 135222 (2020)
- February** **Authors:** M. Rudigier et al.
2020 **Subject:** Multi-quasiparticle sub-nanosecond isomers in ^{178}W
Journal: Phys. Lett. B 801, 024313 (135140)

- February 2020** **Authors:** R. L. Canavan et al.
Subject: Half-life measurements in $^{164,166}\text{Dy}$ using γ - γ fast-timing spectroscopy with the ν -Ball spectrometer
Journal: Phys. Rev. C 101, 024313 (2020)
- February 2020** **Authors:** M. Ciemala et al.
Subject: Testing ab initio nuclear structure in neutron-rich nuclei: Lifetime measurements of second 2^+ state in ^{16}C and ^{20}O
Journal: Phys. Rev. C 101, 021303(R) (2020)
- October 2019** **Authors:** E. Gamba et al.
Subject: Fast-timing measurements in the ground-state band of ^{114}Pd
Journal: Phys. Rev. C 100, 044309 (2019)
- May 2019** **Authors:** K. Auranen et al.
Subject: Proton decay of ^{108}I and its significance for the termination of the astrophysical rp-process
Journal: Phys. Lett. B 792, 187 (2019)
- January 2019** **Authors:** A. Gade et al.
Subject: Structure of ^{70}Fe : Single-particle and collective degrees of freedom
Journal: Phys. Rev. C 99, 011301(R) (2019)
- October 2018** **Authors:** K. Auranen et al.
Subject: Superaligned α Decay to Doubly Magic ^{100}Sn
Journal: Phys. Rev. Lett. 121, 182501 (2018)
- July 2018** **Authors:** W. Reviol et al.
Subject: Low-spin structure of the $N=82$ nucleus ^{137}Cs
Journal: Phys. Rev. C 98, 014328 (2018)
- May 2018** **Authors:** D. J. Hartley et al.
Subject: Masses and β -decay spectroscopy of neutron-rich odd-odd $^{160,162}\text{Eu}$ nuclei: evidence for a subshell gap with large deformation at $N = 98$
Journal: Phys. Rev. Lett. 120, 182502 (2018)
- April 2018** **Authors:** J. Litzinger et al.
Subject: Transition probabilities in neutron-rich $^{80,82}\text{Se}$ and the role of the $\nu g_{9/2}$ orbital
Journal: Phys. Rev. C 97, 044323 (2018)
- March 2018** **Authors:** D. Santiago-Gonzalez et al.
Subject: Probing the single-particle character of rotational states in ^{19}F using a short-lived isomeric beam
Journal: Phys. Rev. Lett. 120, 122503 (2018)
- February 2018** **Authors:** M. D. Jones et al.
Subject: Examination of the low-energy enhancement of the γ -ray strength function of ^{56}Fe
Journal: Phys. Rev. C 97, 024327 (2018)
- February 2018** **Authors:** G. Montagnoli et al.
Subject: Fusion hindrance for the positive Q-value system $^{12}\text{C} + ^{30}\text{Si}$
Journal: Phys. Rev. C 97, 024610 (2018)
- February 2018** **Authors:** C. J. Chiara et al.
Subject: Isomer depletion as experimental evidence of nuclear excitation by electron capture
Journal: Nature 554, 216 (2018)
- January 2017** **Authors:** C. L. Jiang et al.
Subject: Reaction rate for carbon burning in massive stars
Journal: Phys. Rev. C 97, 012801(R) (2018)

- December** **Authors:** S. Bottoni et al.
2017 **Subject:** Nucleon correlations and the structure of $^{71}_{30}\text{Zn}_{41}$
Journal: Phys. Lett. B 775, 271 (2017)
- November** **Authors:** M. Jentschel et al.
2017 **Subject:** EXILL - A high-efficiency, high-resolution setup for γ -spectroscopy at an intense cold neutron beam facility
Journal: Journ. of Instrum. 12, P11003 (2017)
- October** **Authors:** F. Didierjean et al. et al.
2017 **Subject:** Neutron effective single-particle energy above ^{78}Ni : a hint from lifetime measurements in the N=51 isotones ^{85}Se and ^{87}Kr
Journal: Phys. Rev. C 96, 044320 (2017)
- September** **Authors:** L. Iskra et al.
2017 **Subject:** Medium and high spin structure in the ^{94}Y isotope produced in fission induced by cold neutrons
Journal: Phys. Script. 92, 104001 (2017)
- August** **Authors:** S. Almarez-Calderon et al.
2017 **Subject:** Study of the $^{26m}\text{Al}(\text{d,p})^{27}\text{Al}$ reaction and the influence of the ^{26}Al 0^+ isomer on the destruction of ^{26m}Al in the Galaxy
Journal: Phys. Rev. Lett. 119, 072701 (2017)
- June** **Authors:** P. R. John et al.
2017 **Subject:** In-beam γ -ray spectroscopy of the neutron-rich platinum isotope ^{200}Pt toward the N=126 shell gap
Journal: Phys. Rev. C. 95, 064321 (2017)
- January** **Authors:** S. Ceruti et al.
2017 **Subject:** Experimental study of the isovector giant dipole resonance in ^{80}Zr and ^{81}Rb
Journal: Phys. Rev. C 95, 014312 (2017)
- January** **Authors:** L. Iskra et al.
2017 **Subject:** New isomer in ^{96}Y marking the onset of deformation at N=57
Journal: Europ. Phys. Lett. 117, 12001 (2017)
- September** **Authors:** G. Bocchi et al.
2016 **Subject:** The mutable nature of particle-core excitations with spin in the one-valence-proton nucleus ^{133}Sb
Journal: Phys. Lett. B 760, 273 (2016)
- September** **Authors:** W. Reviol et al.
2016 **Subject:** One-neutron transfer study of ^{137}Xe and systematics of $13/2_1^+$ and $13/2_2^+$ levels in N=83 nuclei
Journal: Phys. Rev. C 94, 034309 (2016)
- July** **Authors:** N Cieplicka-Oryńczak et al.
2016 **Subject:** Multipolarity of the $2^- \rightarrow 1^-$, ground-state transition in ^{210}Bi via multivariable angular correlation analysis
Journal: Phys. Rev. C 94, 014311 (2016)
- May** **Authors:** N. Cieplicka-Oryńczak et al.
2016 **Subject:** Approaching complete low-spin spectroscopy of ^{210}Bi with a cold-neutron capture reaction
Journal: Phys. Rev. C 93, 054302 (2016)
- April** **Authors:** M. Krzysiek et al.
2016 **Subject:** Pygmy dipole resonance in ^{140}Ce via inelastic scattering of ^{17}O
Journal: Phys. Rev. C 93, 044330 (2016)

- December** **Authors:** J. Litzinger et al.
2015 **Subject:** Transition probabilities in neutron-rich $^{84,86}\text{Se}$
Journal: Phys. Rev. C 92, 064322 (2015)
- November** **Authors:** S. Ceruti et al.
2015 **Subject:** Isospin mixing in ^{80}Zr : from finite to zero temperature
Journal: Phys. Rev. Lett. 115, 222502 (2015)
- August** **Authors:** S. Bottoni et al.
2015 **Subject:** Cluster-transfer reactions with radioactive beams: A spectroscopic tool for neutron-rich nuclei
Journal: Phys. Rev. C 92, 024322 (2015)
- July** **Authors:** L. Pellegrini et al.
2015 **Subject:** Multitude of 2^+ discrete states in ^{124}Sn observed via the $(^{17}\text{O}, ^{17}\text{O}'\gamma)$ reaction: Evidence for pygmy quadrupole states
Journal: Phys. Rev. C 92, 014330 (2015)
- February** **Authors:** F. C. L. Crespi et al.
2015 **Subject:** 1^- and 2^+ discrete states in ^{90}Zr populated via the $(^{17}\text{O}, ^{17}\text{O}'\gamma)$ reaction
Journal: Phys. Rev. C 91, 024323 (2015)
- January** **Authors:** R. Orlandi et al.
2015 **Subject:** Single-neutron orbits near ^{78}Ni : Spectroscopy of the $N=49$ isotope ^{79}Zn
Journal: Phys. Lett. B 740, 298 (2015)
- November** **Authors:** L. Pellegrini et al.
2014 **Subject:** Pygmy dipole resonance in ^{124}Sn populated by inelastic scattering of ^{17}O
Journal: Phys. Lett. B 738, 519 (2014)
- August** **Authors:** P. R. John et al.
2014 **Subject:** Shape evolution in the neutron-rich osmium isotopes: Prompt γ -ray spectroscopy of ^{196}Os
Journal: Phys. Rev. C 90, 021301(R) (2014)
- July** **Authors:** F. C. L. Crespi et al.
2014 **Subject:** Isospin character of low-lying Pygmy Dipole states in ^{208}Pb via Inelastic Scattering of ^{17}O Ions
Journal: Phys. Rev. Lett 113, 012501 (2014)
- June** **Authors:** C. R. Niță et al.
2014 **Subject:** Fast-timing lifetime measurements of excited states in ^{67}Cu
Journal: Phys. Rev. C 89, 064314 (2014)
- May** **Authors:** G. Bocchi et al.
2014 **Subject:** Probing particle-phonon-coupled states in the neutron-rich nucleus ^{65}Cu by lifetime measurements with fast-timing techniques
Journal: Phys. Rev. C 89, 054302 (2014)
- January** **Authors:** M. Krzysiek et al.
2014 **Subject:** Study of the soft dipole modes in ^{140}Ce via inelastic scattering of ^{17}O
Journal: Phys. Scr. 89, 054016 (2014)
- September** **Authors:** V. Vandone et al.
2013 **Subject:** Global properties of K hindrance probed by the γ decay of the warm rotating ^{174}W nucleus
Journal: Phys. Rev. C 88, 034312 (2013)
- March** **Authors:** F. C. L. Crespi et al.
2013 **Subject:** Response of AGATA segmented HPGe detectors to gamma rays up to 15.1 MeV
Journal: Nucl. Instrum. Methods A 705, 47 (2013)

- June** **Authors:** S. Bottoni et al.
2012 **Subject:** Reaction dynamics and nuclear structure of moderately neutron-rich Ne isotopes by heavy-ion reactions
Journal: Phys. Rev. C 85, 064621 (2012)
- April** **Authors:** D. Montanari et al.
2012 **Subject:** γ spectroscopy of calcium nuclei around doubly magic ^{48}Ca using heavy-ion transfer reactions
Journal: Phys. Rev. C 85, 044301 (2012)
- November** **Authors:** D. Montanari et al.
2011 **Subject:** Elastic, inelastic, and one-nucleon transfer processes in $^{48}\text{Ca} + ^{64}\text{Ni}$
Journal: Phys. Rev. C 84, 054613 (2011)

Publications in peer-reviewed conference proceedings

Total number of peer-reviewed conference proceedings: **42**

- December** **Authors:** G. Montagnoli et al.
2020 **Subject:** Study of fusion hindrance in the system $^{12}\text{C} + ^{24}\text{Mg}$
Journal: Jour. Phys. Conf. Ser. 1643, 012098 (2020)
- December** **Authors:** R. L. Canavan et al.
2020 **Subject:** Reaction Channel selection techniques and γ - γ fast-timing spectroscopy using the ν -Ball Spectrometer
Journal: Jour. Phys. Conf. Ser. 1643, 012117 (2020)
- January** **Authors:** N. Cieplicka et al.
2020 **Subject:** Decay of the “Stretched” M4 Resonance in ^{13}C
Journal: Acta Phys. Pol. B Proc. Suppl. 13, 389 (2020)
- January** **Authors:** M. Ciemala et al.
2020 **Subject:** Short-range lifetime measurements for deep-inelastic reaction products: The ^{19}O test case
Journal: Acta Phys. Pol. B 51, 669 (2020)
- January** **Authors:** S. Ziliani et al.
2020 **Subject:** Spectroscopy of neutron-rich nitrogen isotopes with Agata+Paris+Vamos
Journal: Acta Phys. Pol. B 51, 709 (2020)
- January** **Authors:** E. Adamska et al.
2020 **Subject:** γ -ray spectroscopy of ^{85}Se produced in ^{232}Th fission
Journal: Acta Phys. Pol. B 51, 843 (2020)
- March** **Authors:** S. Bottoni et al.
2019 **Subject:** Investigating core excitations in the ^{131}Sn one-valence-hole nucleus
Journal: Acta Phys. Pol. B 50, 285 (2019)
- March** **Authors:** M. Rudigier et al.
2019 **Subject:** Isomer spectroscopy and sub-nanosecond half-live determination in ^{178}W using the Nuball array
Journal: Acta Phys. Pol. B 50, 661 (2019)
- March** **Authors:** B. Wasilewska et al.
2019 **Subject:** Testing of the brink-axel hypothesis with the Hector+Paris+Kratta set-up
Journal: Acta Phys. Pol. B 50, 169 (2019)

- March** **Authors:** S. Ziliani et al.
2019 **Subject:** Spectroscopy of neutron-rich C, O, N and F isotopes with the Agata+Paris+Vamos setup at Ganil
Journal: Acta Phys. Pol. B 50, 625 (2019)
- March** **Authors:** M. Ciemala et al.
2019 **Subject:** Determination of lifetimes of excited states in neutron-rich ^{20}O isotope from experiment with the Agata+Paris+Vamos setup
Journal: Acta Phys. Pol. B 50, 615 (2019)
- March** **Authors:** N. Jovancevic et al.
2019 **Subject:** Spectroscopy of neutron induced reactions with the ν -ball spectrometer
Journal: Acta Phys. Pol. B 50, 297 (2019)
- November** **Authors:** S. Bottoni et al.
2018 **Subject:** (n,γ) reactions on rare Ca isotopes: Valence-hole - Core excitation couplings in ^{47}Ca
Journal: EPJ Web of Conference 193, 05001 (2018)
- November** **Authors:** N. Cieplicka-Orynczak et al.
2018 **Subject:** The γ -ray spectroscopy studies of low-spin structures in ^{210}Bi and ^{206}Tl using cold neutron capture reactions
Journal: EPJ Web of Conference 193, 05007 (2018)
- November** **Authors:** E. R. Gamba et al.
2018 **Subject:** Fast-timing measurements in neutron-rich odd-mass zirconium isotopes using $\text{LaBr}_3\text{:Ce}$ detectors coupled with Gammasphere
Journal: EPJ Web of Conference 193, 05004 (2018)
- March** **Authors:** N. Cieplicka-Orynczak et al.
2018 **Subject:** The low-spin structure of ^{206}Tl studied by γ -ray spectroscopy from thermal neutron capture reaction
Journal: Acta Phys. Pol. B 49, 561 (2018)
- March** **Authors:** E. R. Gamba et al.
2018 **Subject:** Fast-Timing measurements in ^{100}Zr using $\text{LaBr}_3(\text{Ce})$ detectors coupled with gammasphere
Journal: Acta Phys. Pol. B 49, 555 (2018)
- January** **Authors:** S. Courtin et al.
2017 **Subject:** Cross section measurements in the $^{12}\text{C}+^{12}\text{C}$ system
Journal: EPJ Web of Conferences 165, 01015 (2017)
- November** **Authors:** F. Galtarossa et al.
2017 **Subject:** Fusion hindrance for the positive Q-value system $^{12}\text{C}+^{30}\text{Si}$
Journal: EPJ Web of Conferences 163, 00019 (2017)
- November** **Authors:** S. Courtin et al.
2017 **Subject:** How well do we understand the reaction rate of C burning?
Journal: EPJ Web of Conferences 163, 00011 (2017)
- September** **Authors:** N. Cieplicka-Orynczak et al.
2017 **Subject:** Reduction in the uncertainty of the neutron-capture cross section of ^{210}Bi : Impact of a precise multipolarity measurement of the $2^- \rightarrow 1^-$ main ground-state transition
Journal: EPJ Web of Conferences 146, 10011 (2017)
- March** **Authors:** L. Iskra et al.
2017 **Subject:** Yrast structure above the 9.6 s 8^+ isomer in ^{96}Y isotope
Journal: Acta Phys. Pol. B 48, 581 (2017)

- March** **Authors:** N. Cieplicka-Oryńczak et al.
2017 **Subject:** Study of ^{41}Ca via cold neutron capture
Journal: Acta Phys. Pol. B 48, 577 (2017)
- March** **Authors:** G. Bocchi et al.
2017 **Subject:** Interplay between particle and core excitations in ^{133}Sb
Journal: Acta Phys. Pol. B 48, 595 (2017)
- March** **Authors:** M. Rudigier et al.
2017 **Subject:** Fast timing measurements using an $\text{LaBr}_3(\text{Ce})$ scintillator detector array coupled with Gammasphere
Journal: Acta Phys. Pol. B 48, 351 (2017)
- September** **Authors:** A. J. Mitchell et al.
2016 **Subject:** Recent advances in β -decay spectroscopy at CARIBU
Journal: EPJ Web of Conferences 123, 04006 (2016)
- May** **Authors:** M. Rocchini et al.
2016 **Subject:** G-factor measurements of isomeric states in ^{174}W
Journal: EPJ Web of Conferences 117, 04007 (2016)
- March** **Authors:** M. Krzysiek et al.
2016 **Subject:** Gamma decay of the possible 1-two-phonon state in ^{140}Ce excited via inelastic scattering of ^{17}O
Journal: Acta Phys. Pol. B 47, 859 (2016)
- October** **Authors:** N. Cieplicka-Oryńczak et al.
2015 **Subject:** Excitations of one-valence-proton, one-valence-neutron nucleus ^{210}Bi from cold-neutron capture
Journal: AIP Conf. Proceedings 1681, 060011 (2015)
- May** **Authors:** J. Jolie et al.
2015 **Subject:** The (n,γ) campaigns at EXILL
Journal: EPJ Web of Conferences 93, 01014 (2015)
- March** **Authors:** G. Bocchi et al.
2015 **Subject:** Study of low-spin states in Ca isotopes via neutron capture reactions
Journal: Acta Phys. Pol. B 46, 647 (2015)
- March** **Authors:** S. Leoni et al.
2015 **Subject:** Particle-core couplings close to neutron-rich doubly magic nuclei
Journal: Acta Phys. Pol. B 46, 637 (2015)
- March** **Authors:** S. Bottoni et al.
2014 **Subject:** Reaction dynamics and nuclear structure of moderately neutron-rich Ne isotopes by heavy ion reactions
Journal: EPJ Web of Conferences 66, 03012 (2014)
- March** **Authors:** G. Bocchi et al.
2014 **Subject:** Search for particle-vibration coupling in ^{65}Cu
Journal: EPJ Web of Conferences 66, 02011 (2014)
- March** **Authors:** F. C. L. Crespi et al.
2014 **Subject:** Study of the γ decay of high-lying states in ^{208}Pb via inelastic scattering of ^{17}O ions
Journal: EPJ Web of Conferences 66, 02023 (2014)
- March** **Authors:** P. R. John et al.
2014 **Subject:** Study of shape transition in the neutron-rich Os isotopes
Journal: EPJ Web of Conferences 66, 02057 (2014)

- February** **Authors:** S. Bottoni et al.
2014 **Subject:** γ spectroscopy of neutron-rich nuclei with $A \approx 100$ produced by cluster transfer reactions at REX-ISOLDE
Journal: Acta Phys. Pol B 45, 343 (2014)
- March** **Authors:** S. Bottoni et al.
2013 **Subject:** Reaction dynamics and gamma spectroscopy of Ne isotopes by the heavy ion reaction $^{22}\text{Ne} + ^{208}\text{Pb}$
Journal: Acta Phys. Pol. B 44, 457 (2013)
- September** **Authors:** V, Vandone et al.
2012 **Subject:** Order-to-chaos transition in warm rotating ^{174}W nuclei
Journal: Proceedings of the International School of Physics "Enrico Fermi" 178, 427 (2012)
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