

Academician Nicolae-Victor Zamfir



DATE PERSONALE

Data și locul nașterii: : 24 martie 1952, Brașov

STUDII

- Studii primare și liceale în Brașov (absolvent al Colegiului Național "Andrei Șaguna", în 1971).
- Licențiat al Facultății de Fizică a Universității București (1976).

TITLURI ȘTIINȚIFICE

- 1984: Premiul Hurmuzescu al Academiei Române.
- 1985: Doctor în Fizică.
- 2006: Membru corespondent al Academiei Române (2015: membru titular).
- 2008: Ordinul Serviciu Credincios în rang de Cavaler (2015: Ofițer).
- 2012: Membru Academia Europaea.
- 2015: Fellow European Physical Society.
- 2015: Doctor Onorific Institutul Unificat de Cercetări Nucleare Dubna.
- 2016: Ordinul Legiunea de Onoare Franța în rang de ofițer.
- 2017: Doctor Honoris Causa Universitatea de Vest Timișoara, România.

ACTIVITATEA DIDACTICĂ

Între anii 1997-2004 activitatea didactică s-a desfășurat în cadrul Yale University, New Haven, Connecticut, USA (1997-2004) și din 2005 până în prezent în cadrul Universității București, conducător de doctorat.

ACTIVITATEA DE CERCETARE ȘTIINȚIFICĂ

Activitatea s-a desfășurat în cadrul Institutului Național de Fizică și Inginerie Nucleară Horia Hulubei (IFIN-HH) București – Măgurele (1979-1990, 2004 – prezent), Koln University, Germany (1990-1992),

Brookhaven National Laboratory, Upton, New York (1992-1997) și Yale University, Wright Nuclear Structure Laboratory, New Haven, Connecticut, USA (1997-2004).

Activitatea de cercetare științifică a fost centrată pe studiul structurii nucleului atomic. Rezultatele sunt concretizate în peste 400 lucrări dintre care peste 300 lucrări publicate în reviste de specialitate cotate internațional (ISI) (18 în Physical Review Letters, 22 în Physics Letters, 129 în Physical Review C, etc.) care au fost citate de peste 7500 ori (factor Hirsch 43), peste 100 lecții invitate și comunicări la manifestări internaționale și peste 60 de comunicări la conferințe naționale ale Societății Americane de Fizică (American Physical Society) și co-editor la 8 Proceedings of International Conferences.

Problematica abordată în lucrări se referă în cea mai mare parte la măsurători experimentale de parametri de structură nucleară, compararea rezultatelor cu diverse calcule de modele teoretice și interpretarea rezultatelor. Deasemenea o parte din lucrări se referă la fenomenologii globale ale datelor de structură nucleară și studiul evoluției lor. Unul din cele mai importante rezultate este studiul coexistenței de fază în structura nucleară. Prin datele experimentale obținute și prin calcule de model s-a demonstrat că nucleul atomic la energii joase, în ciuda faptului că are puține grade de libertate, prezintă caracteristicile unei tranziții de fază iar nucleele aflate la punctul critic prezintă coexistența de fază, fenomene similare celor din fizica sistemelor cu multe grade de libertate. Lucrările au stîrnit un interes deosebit, având peste 2000 de citări și fiind menționate ca realizări majore în Planurile de perspectivă în fizica nucleară din SUA și Germania și le-au fost dedicate articole de prezentare în Nature, Science (American Association for Advancement of Science), Physics World, Physics Web News (Institute of Physics UK), Physical Review Focus (American Physical Society) și Nuclear Physics News (European Science Foundation).

- Membru Colegii Editoriale: Romanian Journal of Physics, Romanian Reports on Physics, Nuovo Cimento, Scientific Bulletin of University Politehnica of Bucharest, Buletinul Universității Petrol-Gaze Ploiești.
- Membru al Societății Române de Fizică, European Physical Society și American Physical Society.
- Referent la Physical Review Letters, Physics Letters, Physical Review, Nuclear Physics, Journal of Physics și International Journal of Modern Physics.
- Membru al peste 30 'Advisory Committee' al unor conferințe internaționale. Co-organizator a peste 20 de conferințe, workshop-uri sau școli de vară în domeniul Fizicii Nucleare.

RESPONSABILITĂȚI

Din 2004 Director General al Institutul Național de Fizică și Inginerie Nucleară “Horia Hulubei”, IFIN-HH

Din 2012 Director al Proiectului Extreme Light Infrastructure – Nuclear Physics, ELI-NP

2005 - 2016: Reprezentant Împuternicit al Guvernului României la Institutul Unificat de Cercetări Nucleare IUCN Dubna

2002- 2016: Președinte al Comitetului de colaborare România – Centrul European de Cercetări Nucleare CERN, Geneva

2011 - 2016: Reprezentantul României în Consiliul CERN

2008 - 2018: Reprezentantul României la International Union of Pure and Applied Physics (IUPAP)

2005 - 2008: Membru al Nuclear Physics European Committee (NuPECC) al European Science Foundation

2006 - prezent: Membru al Consiliului Național de Atestare a Titlurilor, Diplomelor și Certificatelor Universitare

2007- prezent: Membru al Colegiului Consultativ pentru Cercetare Dezvoltare și Inovare al Autorității Naționale pentru Cercetare Științifică, 2017 - Președinte

2006 - 2010: Membru al Consiliului de Coordonare al Cercetării Științifice din Academia Română

2007 - 2013: Membru al Nuclear Physics Board al European Physical Society, 2012-2013 Chairman

2016 - prezent: Membru al Executive Committee al European Physical Society

2009 - 2017: Președintele Societății Române de Fizică
2010 - prezent: Reprezentant Împuternicit al României în Consorțiul Extreme Light Infrastructure, ELI
2011 - 2015: Membru al Consiliului Științific FAIR (Vicepreședinte)
2016 - prezent: Membru Board of Directors of the Romanian-U.S. Fulbright Commission (din iunie 2019 Președinte)
2012 - prezent: Președinte al Secției de Științe Fizice al Academiei Române
2020 - prezent: Membru al Consiliului Științific al EURAMET (Asociația Europeană a Institutelor Naționale de Metrologie)

LUCRĂRI ȘTIINȚIFICE PUBLICATE Selecție

- D. Bucurescu, G. Constantinescu, M. Ivascu, N.V. Zamfir, M. Avrigeanu
Recoil-distance Measurements of the Lifetimes of High-spin States in ^{83}Sr and ^{85}Sr
Journal of Physics G7, 399-413, 1981
- D. Bucurescu, G. Cata, G. Constantinescu, D. Cutoiu, M. Ivascu, N.V. Zamfir
Description of the Neutron-deficient Sr and Zr Isotopes in the Interacting Boson Model
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- D. Bucurescu, V. Ceausescu, N.V. Zamfir - editors
"Nuclear Collective Dynamics"
World Scientific, Singapore, 521 pagini, 1983
- N.V. Zamfir, R.F. Casten, P.von Brentano
A Simple Phenomenology for $3-1$ States
Physics Letters B226, 11-16, 1989
- N.V. Zamfir, O. Scholten, P.von Brentano
E1 Calculations in the sdf-Interacting Boson Model
Zeitschrift für Physik A 337, 293-296, 1990
- N.V. Zamfir, D. Bucurescu, R.F. Casten, M. Ivascu
A simple Phenomenology for $2+\square$ States
Physics Letters B241, 463-466, 1990
- N.V. Zamfir, M. Ivascu, P. von Brentano
E3 Transitions in Sm Isotopes in the IBA Model
Revue Roumaine de Physique 35, 115-118, 1990
- N.V. Zamfir, R.F. Casten
Nonpairing like-nucleon valence residual interactions
Physical Review C43, 2879-2882, 1991
- N.V. Zamfir, R.F. Casten
Signatures of gamma softness or triaxiality in nuclear spectra
Physics Letters B 260, 265-270, 1991
- D. Bucurescu, G. Cata-Danil, N.V. Zamfir - editors
"Recent Advances in Nuclear Structure"

World Scientific, Singapore, 514 pagini, 1991

N.V. Zamfir, P.von Brentano, R.F. Casten

On a simple formula for the energy of the lowest octupole state
Annalen der Physik 2, 71-77, 1992

P.von Brentano, N.V. Zamfir, A.Zilges

E1 operator in the sdf-IBA model from an Alaga rule constraint
Physics Letters B 278, 221-224, 1992

N.V. Zamfir, R.F. Casten, P.von Brentano and W.T. Chou

F-spin Multiplets of O(6) Nuclei
Physical Review C 46, R393-R396, 1992

N.V. Zamfir and P.von Brentano

E1 transition rates in transitional 148-152Sm isotopes in the IBA model
Physics Letters B 289, 245-248 (1992)

N.V. Zamfir, A. Dewald, O. Zell and P.von Brentano

Recoil Distance Lifetime Measurements in ¹³¹La
Zeitschrift für Physik A344, 21-24 (1992)

P. von Brentano and N.V. Zamfir

On a Measure of the Complexity of Nuclear States and the Onset of Chaos
Physics Letters B 297, 219-222 (1992)

R.F. Casten and N.V. Zamfir

Valence Correlation Schemes and Signatures of Nuclear Structure: A Simple Global
Phenomenology for B(E2;2+1 \rightarrow 0+1) Values
Physical Review Letters 70, 402-405 (1993)

R.F. Casten, W.T.Chou and N.V. Zamfir

Signature splitting in octupole bands of vibrational and deformed nuclei
Nuclear Physics A 555, 563-584 (1993)

N.V. Zamfir and R.F. Casten

A New Signature for Shape Transitional Regions
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R.F. Casten, N.V. Zamfir and D.S. Brenner

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N.V. Zamfir, P.D.Cottle, J.L. Johnson and R.F. Casten

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Physical Review C 48, 1745-1751 (1993)

N.V. Zamfir

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in Perspectives for the Interacting Boson Model, Padova, 1994
World Scientific, 327-334 (1994)

- N.V. Zamfir, P. von Brentano and R.F. Casten
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Physical Review C49, R605-R607 (1994)
- R.F. Casten, N.V. Zamfir and D.S. Brenner
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Physical Review Letters 72, 3480-3483 (1994)
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New Signatures for Phase/Shape Transitional Regions
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N.V. Zamfir

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Invited Lecture, 10th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics

Santa Fe, New Mexico (USA), 1999, Los Alamos Natl Lab, Los Alamos Neutron Sci Ctr

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N.V. Zamfir and R.F. Casten

Phonons and Phase Transitions in Finite Nuclei

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R.F. Casten, J.Y. Zhang, N.V. Zamfir, Haibin Zhang, and Fei Du

Morphologically distinct trajectories of structural evolution in nuclei and their empirical signatures

Physics Letters B 481, 1-6 (2000)

W.T.Chou, N.V. Zamfir, R.F. Casten

Simplified approach to interacting boson approximation-2 calculations using Hamiltonian invariants

Physical Review C 62, 011301(R) (2000)

Dimitri Kusnezov, N.V. Zamfir, and R.F. Casten

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R.F. Casten and N.V. Zamfir

Evidence for a possible E(5) symmetry in ^{134}Ba

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N. V. Zamfir and D. Kusnezov

Octupole Correlations in the Transitional Actinides and the spdf - Interacting Boson Model

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Jing-ye Zhang, N.V. Zamfir, R.F. Casten, and M.A. Caprio

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R.F. Casten and N.V. Zamfir

Empirical Realization of a Critical Point Description in Atomic Nuclei

Physical Review Letters 87, 052503 (2001)

N.V. Zamfir

Octupole correlations in the actinides and the spdf-IBA model

International Conference on Nuclear Structure and Related Topics, Dubna, Russia

Physics and Atomic Nuclei 64, 1060-1063 (2001)

N.V. Zamfir

Quadrupole-octupole collective states in the light actinides and the spdf IBA model

Invited Lecture, International Conference Structure of the Nucleus at the Dawn of the Century

Bologna, Italy, May 29-June 3, 2000,

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N.V. Zamfir

Octupole Bands in the Actinides and the spdf IBA Model
Invited Lecture, International Conference Nuclear Structure and Related Topics
Dubna, Russia, June 6-10, 2000
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N.V. Zamfir

An Empirical Manifestation of the SUspdf(3) Dynamical Symmetry
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N.V. Zamfir

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Puri, India, Feb. 12-17, 2001
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N.V. Zamfir

Critical point symmetries in nuclei and their empirical realizations
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BgNS Transactions 7, 162-167 (2002)

N.V. Zamfir

Atomic nucleus as the laboratory for symmetry tests
Invited Lecture, Advanced Study Institute on Symmetries and Spin, Summer School Praha, SPIN 2001
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A. Aprahamian, J. Cizewski, S. Pittel, and N.V. Zamfir - editors

Mapping the Triangle
American Institute of Physics, Conf. Proc. 638, 2002

N.V. Zamfir and G.E. Fernandes

The phase/shape transition critical point and the Interacting Boson Model
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N.V. Zamfir, M.A. Caprio, R.F. Casten, C.J. Barton, C.W. Beausang, Z. Berant, D.S. Brenner, W.T. Chou, J.R. Cooper, A.A. Hecht, R. Kruecken, H. Newman, J.R. Novak, N. Pietralla, A. Wolf, and K.E. Zyromski

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N.V. Zamfir, P. von Brentano, R.F. Casten, and J. Jolie

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Physical Review C 66, 021304R (2002)

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- H. Newman, J.R. Novak, N. Pietralla, A. Wolf, and K. Zyromski.
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Physical Review C 66, 054310 (2002)
- N.V. Zamfir, J.Y. Zhang, and R.F. Casten
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Physical Review C 66, 057303 (2002)
- N.V. Zamfir and D. Kusnezov
Octupole correlations in U and Pu nuclei
Physical Review C 67, 014305 (2003)
- N.V. Zamfir and R.F. Casten
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- N.V. Zamfir
Critical point nuclei and the Interacting Boson Model
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Into the 21st Century, Yale University, New Haven, CT (2003)
- N. V. Zamfir, E.A. McCutchan, and R.F. Casten
Critical Point nuclei and the Interacting Boson Model
Invited Lecture, Proc. of Highly Specialized Seminar on Symmetries in Nuclear Structure, Erice, Italy,
2003,
World Scientific, 182-191 (2004)
- N.V. Zamfir
Critical Point Nuclei Nuclear Structure and Related Topics
Invited Lecture, Nuclear Structure and Related Topics, September 2-6, 2003 , Dubna, Russia
Yadernaya Fizika 67 (2004)
- N. V. Zamfir
Evolution of Nuclear Observables in the spherical-deformed phase transition and the IBM
Invited Lecture, Int. Conf. Nuclear Physics: Microscopic Studies of Collective Phenomena
Hacienda Cocoyoc in Morelos, Mexico, April 19-22, 2004,
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Physical Review Letters 93, 132501 (2004)

N.V. Zamfir, G.E. Fernandes, and R.F. Casten

The phase/shape transition critical point and the Interacting Boson Model
in "The Intellectual Path of J.Q. Chen: a Memorial"
World Scientific, Singapore, p. 25-36 (2004)

E. A. McCutchan, N. V. Zamfir, and R. F. Casten

Exciting effects of excited 0^+ energies
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E.A. McCutchan, N.V. Zamfir, and R.F. Casten

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ENAM04, 4th International Conference on Exotic Nuclei and Atomic Masses, September 12-16,
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R.O. Hughes, N.V. Zamfir, D.C. Radford, C.J. Barton, C. Baktash, M.A. Caprio, R.F. Casten, A. Galindo-Uribarri,

C.J. Gross, P.A. Hausladen, E.A. McCutchan, J.J. Ressler, D. Shapira, D.W. Stracener, C.H. Yu
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Physical Review C 71, 044311 (2005)

E.A. McCutchan and N.V. Zamfir

Simple Description of light W, Os, and Pt nuclei in the Interacting Boson Model
Physical Review C 71, 054306 (2005)

E.A. McCutchan, R.F. Casten, and N.V. Zamfir

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N.V. Zamfir, D. Kusnezov, and M. Babilon

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R.O. Hughes, D.A. Meyer, J. Qian, J.J. Ressler, N.J. Thomas, V. Werner, E. Williams, and R. Winkler

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N.V. Zamfir

The Bucharest Tandem Accelerator – part of the European Infrastructure
Invited Lecture, 6th International Conference of the Balkan Physical Union, Istanbul, Turkey, 2006,
AIP Conference Proceedings CP899 23-25 (2007)

Nicolae Victor Zamfir

The Bucharest Tandem Accelerator - part of the European Infrastructure
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E.A. McCutchan, Dennis Bonatsos, N.V. Zamfir and R.F. Casten

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N.V. Zamfir

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Nuclear Physics News International 18(2), 3-4 (2008)

D.S. Delion, N.V. Zamfir

Systematics of 2_1^+ states in semimagic nuclei
Physical Review C 82, 031302 (R) (2010)

N. V. Zamfir

The ELI-Nuclear Physics Project
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Journal of Physics: Conference 366, 012052 (2011)

D. Habs, T. Tajima, N. V. Zamfir

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N.V. Zamfir

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- I. Ursu, N.V. Zamfir
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- N.V. Zamfir
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(Implementation Status of the Extreme Light Infrastructure – Nuclear Physics ELI-NP Project)
Revista de Politica Stiintei si Scientometrie 2, 187- 192 (2013)
- N.V. Zamfir
Nuclear Physics with 10 PW laser beams at Extreme Light Infrastructure - Nuclear Physics (ELI-NP)
European Physical Journal–Special Topics 223, 1221-1227, 2014
- N.V. Zamfir
Extreme Light Infrastructure – Nuclear Physics (ELI-NP) European Research Centre
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