

CURRICULUM VITAE

of Prof. Anatoli Afanasjev ¹

Updated 05/17/2014

1 Academic degrees

06/16/1993 Dr. Phys. (Doctor of Physics)

Nuclear Research Center, Latvian Academy of Sciences, Latvia

Dissertation "Study of quadrupole rotation-vibration and reflection asymmetric rotor+two particle coupling models for deformed odd-odd nuclei"

06/11/1999 Dr. hab. Phys. (Habilitation Doctor of Physics)

Latvian State University, Riga, Latvia

Habilitation work "Theoretical study of rotating nuclei at extreme conditions"

2 Stages of university education

09/1979 - 06/1984 Latvian State University, Riga, Latvia

main subjects: physics, mainly theoretical nuclear physics

11/1989 - 06/1993 PhD student, Nuclear Reaction Laboratory, Institute of Physics (Nuclear Research Center since summer of 1992), Latvian Academy of Sciences

main subject: theoretical nuclear physics

3 Complete professional background

09/1986 - 03/1993

- Senior engineer of Nuclear Safety Service, Nuclear Reactor, Institute of Physics (Nuclear Research Center since summer of 1992) of Latvian Academy of Sciences, Salaspils, Latvia

03/1993 - 02/1994

- Researcher, Nuclear Reaction Laboratory, Nuclear Research Center, Latvian Academy of Sciences, Salaspils, Latvia

02/1994 - 12/1998

- Senior Researcher, Nuclear Reaction Laboratory, Nuclear Research Center, Latvian Academy of Sciences, Salaspils, Latvia

¹"A. V. Afanasjev" or "Anatoli Afanasjev" are the spellings of my name in the publications

01/1999

- Senior Researcher, Laboratory of Radiation Physics, Institute of Solid State Physics, University of Latvia, Salaspils, Latvia

09/1993 - 12/1993; 08/1994 - 04/1995; 12/1995 - 06/1996; 03/1997 - 04/1998;

- Visiting Scientist, Department of Mathematical Physics, Lund Institute of Technology, Sweden

05/1995 - 10/1995; 01/1997 - 02/1997

- Volkswagenstiftung Fellow at the Department of Physics T30, Technical University of Munich, Germany

06/1996 - 08/1996

- Visiting Scientist, Department of Physics T30, Technical University of Munich, Germany

03/1998 - 03/1998

- Visiting Scientist, Physics Department, State University of New York at Stony Brook, USA

10/1996 - 12/1996

- Visiting Scientist, NORDITA - Nordisk Institut for Teoretisk Fysik, Copenhagen, Denmark

05/1998 - 01/2000

- Alexander von Humboldt fellow at the Physik-Department T30, Technical University of Munich, Germany

01/2000 - 07/2000

- Research Associate (position BAT2A), Physik-Department T30, Technical University of Munich, Germany

10/2000 - 06/2001

- Postdoctoral Research Associate, University of Notre-Dame, USA

07/2001 - 06/2002

- Visiting Scientist, Argonne National Laboratory, USA

07/2002 - 08/2005

- Research Assistant Professor, University of Notre-Dame, USA

08/2005 - 08/2007

- Assistant Professor, Mississippi State University, USA

08/2007 - 08/2010

- Associate Professor, Mississippi State University, USA

08/2010 - now

- Professor, Mississippi State University, USA

4 Long-term visits starting from 2008

- 05/06/2008-05/30/2008
RIKEN Nishina Center for Accelerator-Based Science, Japan, funded by the JUSTIPEN program
- 06/25/2008-07/29/2008
Institute of Solid State Physics, University of Latvia, Latvia
- 01/03/2012 - 04/27/2012
sabbatical leave at Joint Institute for Heavy Ion Research, Oak Ridge National Laboratory, Oak Ridge, TN, USA

5 Teaching experience

01/1984 - 05/1984, 09/1988 - 05/1989

- teaching of physics and mathematics in high school, Riga, Latvia

2000 - 2001, 2001 - 2002 academic years

- assistance (by presenting approximately 15% of lectures) in teaching of the “Quantum Mechanics” course for graduate students, University of Notre Dame, USA

2002, fall semester

- General Physics III M (Phys-253) course for sophomore students, University of Notre-Dame, USA
- General Physics III M - Laboratory (Phys-253-Lab) course for sophomore students, University of Notre-Dame, USA

2003, spring semester

- course 602 “Statistical Thermodynamics” for graduate students, University of Notre-Dame, USA

2003, fall semester

- course 503 “Methods of Theoretical Physics I” for graduate students, University of Notre-Dame, USA

2004, spring semester

- course 602 “Statistical Thermodynamics” for graduate students, University of Notre-Dame, USA

2004, fall semester

- course 503 “Methods of Theoretical Physics I” for graduate students, University of Notre-Dame, USA

2005, spring semester

- course 602 “Statistical Thermodynamics” for graduate students, University of Notre-Dame, USA

2005, fall semester

- course 4323/6323 “Electromagnetic Fields I” Mississippi State University, USA

2006, spring semester

- course 4333/6333 “Electromagnetic Fields II” Mississippi State University, USA

2006, fall semester

- course 4323/6323 “Electromagnetic Fields I” Mississippi State University, USA

2007, spring semester

- course 2223 “Physics II: Electricity and magnetism”, Mississippi State University, USA

2007, fall semester

- course 2223 “Physics II: Electricity and magnetism”, Mississippi State University, USA

2008, spring semester

- course 4333/6333 “Electromagnetic Fields II” Mississippi State University, USA

2008, fall semester

- course 2223 “Physics II: Electricity and magnetism”, Mississippi State University, USA

2009, spring semester

- course 2223 “Physics II: Electricity and magnetism”, Mississippi State University, USA

2009, fall semester

- course 4323/6323 “Electromagnetic Fields I” Mississippi State University, USA

2010, spring semester

- course 2223 “Physics II: Electricity and magnetism”, 2 sections, Mississippi State University, USA

2010, fall semester

- course 8743 “Quantum mechanics I”, Mississippi State University, USA

2011, spring semester

- course 2223 “Physics II: Electricity and magnetism”, Mississippi State University, USA

2011, fall semester

- course 8743 “Quantum mechanics I”, Mississippi State University, USA

2012, fall semester

- Directed Individual Studies “Advanced theoretical nuclear structure”, Mississippi State University, USA

2013, spring semester

- course 2223 “Physics II: Electricity and magnetism”, 2 sections, Mississippi State University, USA

- Directed Individual Studies “Theoretical nuclear structure”, Mississippi State University, USA

2013, fall semester

- course 4323/6323 “Electromagnetic Fields I” Mississippi State University, USA 2013, fall semester

2014, spring semester

- course 4333/6333 “Electromagnetic Fields II” Mississippi State University, USA

6 Grants (only those in USA are listed)

- 1998 - U.S. National Research Council, Twinning program USA-Latvia (1997-1999), project “Investigation of Smooth Terminating Bands for nuclei in the $A \sim 110$ Region” - 13,500 \$
- 2004 - 2006 - U. S. Department of Energy, Office of Energy Research, project “Nuclear properties at extreme density, temperature, spin and isospin” - 414,000 \$ (138,000 \$ per year) (coinvestigator)
- 2007 - Travel grant from the Mississippi State University - 1,000 \$.
- 2008 - Travel grant from Japan-U.S. Institute for Physics with Exotic Nuclei (JUSTIPEN) - 4,112 \$
- 2006 - 2009 - U. S. Department of Energy, Office of Energy Research, project “Nuclei at extreme conditions: a relativistic study” - 212,000 \$ (Principal Investigator)
- 2009 - Travel grant from Japan-U.S. Institute for Physics with Exotic Nuclei (JUSTIPEN) - 2,000 \$
- 2009 - 2012 - U. S. Department of Energy, Office of Energy Research, project “Nuclei at extreme conditions: a relativistic study” - 222,000 \$ (Principal Investigator)
- 2010 - Travel grant from Japan-U.S. Institute for Physics with Exotic Nuclei (JUSTIPEN) - 2,909 \$

- 2011 - Travel grant from Japan-U.S. Institute for Physics with Exotic Nuclei (JUSTIPEN) - 3,208 \$
- 2012 - Travel grant from France-U.S. Institute for Physics with Exotic Nuclei (FUSTIPEN) - 2,575 \$
- 2012 - 2015 - U. S. Department of Energy, Office of Energy Research, project “Nuclei at extreme conditions: a relativistic study” - 210,000 \$ (Principal Investigator)
- 2013 - Travel grant from Japan-U.S. Institute for Physics with Exotic Nuclei (JUSTIPEN) - 2.030 \$
- 2013 - Travel grant from China-U.S. Institute for Physics with Exotic Nuclei (CUSTIPEN) - 1,596 \$

7 Awards

- 1994, 1995, 1997 - the fellowships of the Royal Swedish Academy of Sciences (Sweden)
- 1993, 1995, 1997, 2000 - the fellowships of the Crafoord Foundation (Sweden)
- 1996 - the Nordic-Baltic fellowship at NORDITA (Denmark)
- 1997 - the recipient of the grant within the Twinning Program between USA and Latvia, National Research Council, USA
- 1995, 1997 - the fellowships of the Volkswagen Foundation (Germany)
- 1998 - 2000: the fellowship of the Alexander von Humboldt Foundation (Germany)
- 2010: 2010 State Pride Award, Mississippi State University
- 2011: James W. Bagley faculty award, Mississippi State University
- 2013-2014 Dean’s Eminent Scholar, College of Arts and Sciences, Mississippi State University
- **2013 Fellow of American Physical Society**
- 2014 ORED Faculty Research Award for the College of Arts Sciences, Mississippi State University
- 2014 College of Arts and Sciences Faculty Research Award Receptient, Mississippi State University

8 Citation index of my works

Usually, the impact of the work of a scientist on the research field is accessed via citation index, i.e. the number of times his article is cited by other scientists. The analysis of the citation index of my works is performed according to the ISI Web of Knowledge (located on <http://isi4.isiknowledge.com/>). This is a web-based platform which provides sources and the tools to access, analyze, and manage research information about the publications of the specific author. Note that because of historical reasons my publications appear under the name A.V. Afanasjev. On 11/20/2012, my 121 journal articles accessible on ISI Web of Knowledge have been cited 2692 times: this represents an average 22.24 citations per article. 5 of my articles have a citation index exceeding 100, and 12 articles have a citation index exceeding 50. **h-index** of my publications is 26.

9 Memberships

American Physical Society (APS)

10 Knowledge and experience with software

- Programming languages
 1. Fortran (Fortran 77 and Fortran 90 flavors) [20 years of experience]
 2. MATLAB
 3. TurboPascal
 4. Basic
 5. PL1
- Operational systems
 1. Linux, UNIX
 2. Windows

11 Referee activities

Reviewer for the following journals:
Physical Review Letters,
Physics Letters B,
Physics Review C,
Nuclear Physics A,
Journal of Physics G,
European Physical Journal,
Physica Scripta,
International Journal of Modern Physics E,
Progress of Theoretical Physics.

12 Presentations at the Conferences

12.1 ORAL PRESENTATIONS

1. 39 USSR conference on the Nuclear spectroscopy and the structure of atomic nuclei, April 10 - 13, 1989, Leningrad, USSR

Octupole deformation of the Eu isotopes

2. NORDITA Halo Weekend-94, January 1994, Copenhagen, Denmark

Octupole correlations in the $A \sim 150$ region

3. IV International Conference on Selected Topics in Nuclear Structure, July 1994, Dubna, JINR, Russia

Microscopic structure of high-spin spectra of nuclei in the $Z \sim 42-45$ and $N \sim 46-49$ region

4. 8th Nordic Meeting on Nuclear Physics, June 5 - 9, 1995, Ronneby Brunn, Sweden,

High-Spin Collective and Non-collective Structures in Nuclei Close to Double-Magic ^{100}Sn

5. NORDITA Study Weekend on Euroball Physics, May 9 - 12, 1996, Copenhagen, Denmark

Cranked relativistic mean field description of superdeformed rotational bands in the $A \sim 140 - 150$ mass region

invited speaker

6. International Symposium on EXOTIC NUCLEAR SHAPES, May 12 - 17, 1997, Debrecen, Hungary

Cranked relativistic mean field description of superdeformed rotational bands

7. International conference "Advances in Nuclear Physics and Related Areas", July 8 - 12, 1997, Thessaloniki, Greece

Rotational bands at the limit of angular momentum

invited speaker

8. The International Conference "NUCLEAR STRUCTURE AND RELATED TOPICS", September 9 - 13, 1997 Dubna, Russia

Relativistic Mean Field Theory in Rotating Frame: Properties of Superdeformed Rotational Bands

9. Swedish Nuclear Physics Days, December 12 - 13, 1997, Lund, Sweden

Lifetimes in Terminating Bands

invited speaker

10. 215th American Chemical Society National Meeting, Division of Nuclear Chemistry and Technology, Conference "Nuclear Structure with Large Gamma-Ray Detector Arrays and their Auxiliary Devices", March 29 - 31, 1998, Dallas, Texas, USA

Relativistic Mean Field versus Nilsson-Strutinsky description of high-spin phenomena in the 'unpaired' regime

invited speaker

11. 9th Nordic Meeting on Nuclear Physics, Finland, August 4 - 8, 1998

Rotating nuclei in the cranked relativistic mean field theory

invited speaker

12. International Nuclear Physics Conference, August 24 - 28, 1998, Paris, France

Rotating nuclei at extreme conditions: cranked relativistic mean field description.

13. International Conference on Achievements and Perspectives in Nuclear Structure, July 11 - 17, 1999, Crete, Greece

Superdeformations in Relativistic and Non-Relativistic Mean Fields

invited/keynote speaker

14. International Symposium on Exotic Nuclear Structures, May 15 - 20, 2000, Debrecen, Hungary

Properties of superdeformed fission isomers in the cranked relativistic Hartree-Bogoliubov Theory

15. International Conference "Bologna 2000, Structure of the Nucleus at the Dawn of the Century", May 29 - June 3, 2000, Bologna, Italy

Cranked relativistic Hartree-Bogoliubov theory: Superdeformation in the $A \sim 190$ mass region

invited speaker

16. Pingst 2000 International workshop "Selected topics of $N = Z$ nuclei", June 2000, Lund, Sweden,

Mean field studies of high-spin properties in the $A \sim 30$ and 60 regions of superdeformation

invited speaker

17. International workshop "Nuclear structure for the 21st century" at the Institute for Nuclear Theory in Seattle, USA, November 28, 2000, USA

Time-odd mean fields in the rotating frame: Microscopic nature of nuclear magnetism

invited speaker

18. NATO Advanced Research Workshop: "The Nuclear Many-Body Problem 2001", Brijuni National Park, Pula, Croatia, June 2 - 5, 2001
Rotating nuclei in the Relativistic Mean Field theory
 keynote speaker
19. Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New Hampshire, USA, June 17 - 22, 2001
Rotating properties of $N \sim Z$ nuclei in conventional models
 invited speaker
20. Nuclear Theory Workshop on *Rare Isotope Physics*, Physics Division, Argonne National Laboratory, Argonne, USA, June 25 - 29, 2001
Microscopic nature of nuclear magnetism in Relativistic Mean Field Theory
 invited speaker
21. Conference on Frontiers of Nuclear Structure, Berkeley, California, July 29 - August 2, 2002, UC Berkeley
Probing the Gateway to Superheavy Nuclei in Cranked Relativistic Hartree-Bogoliubov Theory
22. Conference on "Nuclei at the Limits", Argonne National Laboratory, July 26-30, 2004, Argonne, IL, USA
Self-consistency Effects in Superheavy nuclei
23. Institute for Nuclear Theory workshop "Relativistic Density Functional Theory for Nuclear Structure", September 20-24, 2004, Seattle, USA
Cranked relativistic Hartree-Bogoliubov theory: rotating nuclei, proton-neutron pairing and towards superheavy nuclei invited speaker
24. American Physical Society, Nuclear Physics Division, Chicago, USA, October 28-31, 2004
Superdeformation and hyperdeformation in the $A \sim 110$ mass region.
25. Joint Institute for Nuclear Astrophysics "R-process discussions", Notre Dame, USA, January 28-29, 2005
Mean field (and beyond) model approaches for r-process studies invited speaker (20 min)
26. International Conference on Finite Fermionic Systems: Nilsson Model 50 Years, June 14-18, 2005, Lund, Sweden
Superheavy nuclei: relativistic mean field outlook
 keynote speaker [40 min]
27. Institute of Nuclear Theory Workshop "Pairing degrees of Freedom in Nuclei and the Nuclear Medium", Nov. 14-17, 2005, Seattle, USA
Cranking Relativistic Hartree-Bogolyobov theory: pairing in rotating nuclei and

the problem of proton-neutron pairing

invited speaker [45 min]

28. ATLAS Users Workshop, Physics Division, Argonne National Laboratory, USA, April 8, 2006

ATLAS+GAMMASPHERE: future challenges - theoretical outlook

invited talk

29. International conference “Nuclear Structure’06”, July 24-28, 2006, Oak Ridge, Tennessee, USA

Rotating $N \sim Z$ nuclei: A search for isovector and isoscalar Neutron-Proton Pairing Condensates,

invited talk [20 min]

30. Workshop “The future of Gamma-Ray Spectroscopy”, Florida State University, Tallahassee, August 17-18, 2006, USA

GRETA/GRETINA: physical challenges - view of theorist

invited talk [45 min]

31. XIII Nuclear Physics Workshop Maria and Pierr Currie “Pairing and beyond - 50 years of the BCS Model”, Kazimierz Dolny, Poland, September 27 - October 1, 2006

High-spin structures as the probes of proton-neutron pairing

keynote speaker [35 min]

32. 2006 Meeting of the Nuclear Physics Division of American Physical Society, October 25 - October 28, 2006, Gaylord Opryland, Nashville, USA

Time-odd mean fields in covariant density functional theory

contributed talk

33. Division of Nuclear Physics Town Meeting for NSAC Long Range Plan, January 19-21, 2007, Chicago, USA

Relativistic Mean Field Approaches

invited speaker

34. Mississippi Academy of Science 2007 annual meeting, February 22-23, 2007, Starkville, USA

Superheavy nuclei: a search for an island of stability

contributed talk

35. Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New Hampshire, USA, June 3 - 8, 2007

Superheavy nuclei: theoretical challenges

invited speaker

36. International Workshop on Nuclear Structure NS07: New Pictures in the extended Isospin

Space, June 11-14, 2007, Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan

Superheavy nuclei: self-consistency effects and single-particle degrees of freedom
invited talk

37. 2007 Annual Fall meeting of the Division of Nuclear Physics, American Physical Society, October 11, 2007, Newport News, Virginia, USA

Band Termination and Density Functional Theory
contributed talk [12 min]

38. 2007 Annual Fall meeting of the Division of Nuclear Physics, American Physical Society, October 13, 2007, Newport News, Virginia, USA

Hyperdeformation in the cranked relativistic mean field theory
contributed talk [12 min]

39. Fourth International Conference on “Fission and Properties of Neutron-Rich nuclei”, November 14, 2007, Sanibel Island, Florida, USA

Relativistic mean field studies of superheavy nuclei

40. DFT-UNEDF workshop “Determination of the Nuclear Energy Functional: Optimization Strategy, Essential Experimental Data and Chi-Squared Metrics”, Joint Institute for Heavy Ion Research, Oak Ridge National Laboratory, January 22, 2008, Oak Ridge, USA,

Terminating states: Can they be used to constraint DFT?
contributed talk [10 min]

41. The 2d LACM-EFES-JUSTIPEN Workshop, Joint Institute for Heavy Ion Research, Oak Ridge National Laboratory, January 23-25, 2008, Oak Ridge, USA.

Hyperdeformation: a microscopic outlook
invited talk [20 min]

42. International conference “Nuclear Structure’08”, June 3-6, 2008, East Lansing, Michigan, USA

Hyperdeformation in the cranked relativistic mean field theory: questions and answers
contributed talk [20 min]

43. The 2-nd International Conference “Current Problems in Nuclear Physics and Atomic Energy”, June 9-15, 2008, Kiev, Ukraine

Superheavy and rotating nuclei within the framework of relativistic Hartree-Bogoliubov theory
invited talk [30 min]

44. International workshop on “Scaling the heights of the N=Z line above 56-Ni”, European Centre for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy, September 16-19, 2008

Neutron-proton pairing and other “new” physics in rotating $N \sim Z$ nuclei

keynote speaker [45 min]

45. International conference “Nuclear Structure and Dynamics”, Dubrovnik, Croatia, May 4-8, 2009

Covariant Density Functionals: time-odd channel investigated.

contributed talk [20 min]

46. Institute for Nuclear Theory workshop “Effective Field Theories and the Many-Body Problem”, March 23 - June 5, 2009, Seattle, USA

Understanding time-odd mean fields in covariant density functional theories

oral presentation [75 min]

47. International conference “Nuclear Structure and Related Topics”, Dubna, Russia, June 30 - July 4, 2009

Time-odd mean fields in density functional theories,

invited talk [20 min]

48. Mississippi State University, Research Showcase, College of Arts and Sciences, October 22, 2009

Superheavy nuclei: A journey to the island of stability

conference-type presentation [20 min]

49. JUSTIPEN-EFES workshop on unstable nuclei, RIKEN, Japan, December 7-9, 2009

Covariant density functional studies of time-odd mean fields and fission barriers

oral presentation [30 min]

50. The VI International workshop on direct reactions with exotic beams, Florida State University, Tallahassee, FL, USA, December 16-19, 2009,

The fission barriers in covariant density functional theory: superheavy nuclei and the role of pairing.

oral presentation [20 min]

51. The 4th LACM-EFES-JUSTIPEN Workshop, Joint Institute for Heavy Ion Research, Oak Ridge, Tennessee, USA, Oak Ridge National Laboratory March 15-17, 2010

Fission Barriers in Covariant Density Functional theory

oral presentation [30 min]

JUSTIPEN = Japan-US Theory Institute for Physics with Exotic Nuclei

LACM= nuclear large amplitude collective motion

EFES = JSPS Core-to-Core program ”International Research Network for Exotic Femto Systems (EFES)”

52. The second international EURORIB (European Radioactive Ion Beam) conference “EURORIB’10”, 06/06/10 - 06/11/10, Lamoura, France.

Heavy and superheavy nuclei in the covariant density functional theory,

oral presentation [20 min]

53. 2010 International Nuclear Physics Conference (INPC 2010), 07/04-07/09/2010, Vancouver, Canada

Spectroscopy of the heaviest elements (Theory)

invited talk at parallel session [25 min]

54. GRETINA Science Collaboration Meeting, 10/14-10/15/2010, Argonne National Laboratory, Physics Division, USA

Superheavy nuclei: theoretical perspectives and suggestions for experiments

invited talk [45 min]

55. University of Aizu-JUSTIPEN-EFES symposium “Cutting-Edge Physics of Unstable Nuclei”, 10/10-10/13/2010, Aizu-Wakamatsu, Japan,

Fission barriers in actinides and superheavy nuclei: CDFT perspective.

oral presentation [25 min].

56. Third workshop “Nuclei and Mesoscopic physics”, Michigan State University, East Lansing, Michigan, USA, 03/09/2011

Pairing in nuclear systems: open questions

invited talk [60 min]

57. The 5th LACM-EFES-JUSTIPEN Workshop, Joint Institute for Heavy Ion Research, Oak Ridge, Tennessee, USA, Oak Ridge National Laboratory, March 15-17, 2011

Single-particle states in covariant DFT: at and beyond mean field level

oral presentation [30 min]

58. International symposium “Advances in Nuclear Many-Body Theory”, Primosten, Croatia, June 7-10, 2011

Single-particle degrees of freedom in covariant density functional theory

invited talk [30 min]

59. Joint ATLAS-HRIBF-NSCL-FRIB User Workshop, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI, USA, August 18-20, 2011

Superheavy nuclei: theoretical perspective

invited talk [25 min] at parallel breakout session “Superheavy elements”

60. YIPQS Long-term workshop “Dynamics and correlations in exotic nuclei (DCEN2011)”, Yukawa Institute for Theoretical Physics, Kyoto, Japan, September 20 - October 28, 2011

Spectroscopic quality energy density functionals: problems and solutions.

oral presentation [40 min] given on September 23.

61. YIPQS Long-term workshop “Dynamics and correlations in exotic nuclei (DCEN2011)”, Yukawa Institute for Theoretical Physics, Kyoto, Japan, September 20 - October 28, 2011

Fission barriers: open problems.

oral presentation [30 min] given on September 21 in the discussion session on fission barriers.

62. 18th Nuclear Physics Workshop "Marie & Pierre Curie", Kazimierz, Poland, September 28 - October 2, 2011

Recent progress in the study of fission barriers in covariant density functional theory

invited talk [45 minutes]

63. Collaboration Meeting, CAE, Saclay, France, April 10-11, 2012

Single-particle degrees of freedom within the covariant EDF method

oral presentation [60 min]

64. FUSTIPEN topical meeting "The structure of heavy nuclei", GANIL, Caen, France, April 16-17, 2012,

The structure of heavy nuclei in DFT: from actinides to superheavies

invited talk [80 min]

65. FUSHE 2012 - ENSAR-ECOS workshop on Future SuperHeavy Element Strategy, Erismuhle - Weilrod, Germany, May 13-16, 2012,

Theory: Ground state properties and the limits of the region of superheavy elements

invited talk [50 min]

66. International conference "Nuclear Structure 2012", Argonne National Laboratory, Lemont, IL, USA, August 13-17, 2012,

Towards spectroscopic quality energy density functionals

oral presentation [20 min]

67. Low Energy Community Meeting, Argonne National Laboratory, Lemont, IL, USA, August 17-18, 2012

Theory of superheavy elements: current status and challenges.

invited talk [20 min] at working group meeting "Superheavy Elements"

68. The 6th LACM-TORIJIN-JUSTIPEN Workshop, Joint Institute for Heavy Ion Research, Oak Ridge, Tennessee, Oak Ridge National Laboratory, Oak Ridge, TN, USA, October 31 - November 2, 2012

Actinides and superheavy elements: pairing, single-particle and rotational properties revisited.

oral presentation [30 min]

69. Fifth international conference on **Fission and Properties of Neutron-Rich Nuclei**, November 4-10, 2012, Sanibel Island, Florida, USA,

Fission of actinides and superheavy nuclei: covariant density functional theory perspective.

invited talk [25 min]

70. Fifth International Workshop on Nuclear fission and Fission-Product Spectroscopy, May 28-31, 2013, Caen, France,
Nuclear fission in covariant density functional theory.
contributed talk [20 min]
71. Department of Energy Comparative Review of Nuclear Theory, Gaithersburg, MD, 22 June, 2013,
Nuclear at extreme conditions: a relativistic study
talk [30 min]
72. 20th Nuclear Physics Workshop “Marie & Pierre Curie”, September 25-29, 2013, Kaziemierz, Poland,
Microscopic description of rotation: from ground states to the extremes of ultra-high spin
invited talk [30 min]
73. Institute for Nuclear Theory Program INT-13-3 “Quantitative Large Amplitude Shape Dynamics: fission and heavy ion fusion”, September 23 - November 15, 2013 (presentation on October 1, 2013)
Fission in covariant DFT: status and open questions
invited talk [60 min]
74. JUSTIPEN-JUSEIPEN Workshop, December 9-12, 2013, RIKEN Wako campus, Japan
Global performance of covariant energy density functionals: from proton to neutron drip lines
contributed talk [25 min]
75. The 2^d CUSTIPEN Workshop on “Advances in the computational nuclear many-body problems”, December 15-17, 2013, Beijing, Peking University, China
Nuclear landscape in covariant density functional theory,
talk [40 min]
76. American Physical Society meeting, April 5-8, 2014, Savannah, Georgia, USA
Reflection asymmetric shapes in covariant density functional theory.
contributed talk [12 min]
77. Fourth workshop “Nuclei and Mesoscopic Physics 2014”, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA, May 5-9, 2014
Nuclear energy density functionals: what we can learn about/from their global performance
oral talk [40 min]

12.2 POSTER PRESENTATIONS

1. International conference “New Nuclear Structure Phenomena in the Vicinity of Closed Shells”, Aug. 30 - Sept. 3, 1994, Stockholm-Uppsala, Sweden

Microscopic Structure of High-Spin Spectra of Selected $A \approx 90$ Nuclei near Proton Drip Line

2. XXIV Mazurian Lakes School of Physics, including “High Angular Momentum Phenomena Workshop in honour of Zdislaw Szymanski, Piaski, Poland, Aug. 23 - Sept. 3, 1995

A. Smooth Termination of Collective Rotational Bands in the $A \sim 110 (Z \geq 50, N \sim 60)$ mass region

B. Cranked Relativistic Mean Field Description of Superdeformed Rotational Bands in the $A \sim 80$ and $A \sim 150$ mass regions.

3. Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New Hampshire, June 15 - June 20, 2003, USA

Critical analysis of rotating $N \sim Z$ nuclei concerning proton-neutron pairing

4. The sixth International conference on Radioactive Nuclear Beams (RNB6), Argonne National Laboratory, Illinois, September 22-26, 2003, USA

Isovector ($t=1$) versus isoscalar ($t=0$) scenario for neutron-proton pairing in rotating $N \sim Z$ nuclei

5. International Nuclear Physics Conference INPC2004, Goteborg, Sweden, June 27-July 2, 2004

Dominance of the isovector ($t = 1$) neutron-proton pairing in rotating $N \sim Z$ nuclei

13 Colloquia and seminars

1. Department of Mathematical Physics, Lund Institute of Technology Lund, Sweden November, 1993

Octupole correlations in rare-earth nuclei

2. Physik-Department der Technischen Universität München, Garching, Germany, July, 1995

Properties of smooth terminating bands in the $A \sim 110$ mass region

3. Department of Mathematical Physics, Lund Institute of Technology, Lund, Sweden, 01/29/1996

Cranked Relativistic Mean Field Description of Superdeformed Rotational Bands in the $A \sim 150$ mass region

4. Physik-Department der Technischen Universität München, Garching, Germany, 07/9/1996

Cranked Relativistic Mean Field Description of Superdeformed Rotational Bands

5. NORDITA, Copenhagen, Denmark, 11/13/1996

Relativistic Mean Field Description of Rotational Bands

6. Department of Physics, State University of New York at Stony Brook, Stony Brook, New York, USA, 03/11/1998

Rotating nuclei at extreme conditions: Cranked Relativistic Mean Field Description

7. Physik-Department der Technischen Universität München, Garching, Germany, 07/21/1998

Rotating nuclei at the extremes

8. Università degli Studi di Padova, Dipartimento di Fisica “Galileo Galilei”, Padova, Italy, 11/17/1998

Superdeformation at high spin: Cranked Relativistic Mean Field Description

9. Oliver Lodge Laboratory, University of Liverpool, Liverpool L69 3BX, United Kingdom, 11/15/1999

Superdeformed rotating nuclei in the cranked relativistic mean field theory

10. Department of Physics, York University, Heslington, York YO10 5DD, United Kingdom, 11/18/1999

Relativistic mean field theory: what has been learnt about rotating nuclei

11. Institut de Recherches Subatomiques, Unite mixte de Recherche CNRS-IN2P3 et Université Louis Pasteur, Strasbourg, France, 04/06/2000

Relativistic description of rotating nuclei

12. Physik-Department der Technischen Universität München, Garching, Germany, 07/18/2000

Exotic phenomena in the physics of high-spin states in nuclei

13. Department of Physics, University of Notre Dame, USA, 11/13/2000

Rotating nuclei in the relativistic mean field theory

14. Department of Physics, State University of New York at Stony Brook, Stony Brook, New York, USA, 12/12/2000

Cranked Relativistic Hartree-Bogoliubov theory: application to the rotating nuclei

15. Michigan State University, NSCL/Cyclotron Laboratory, East Lansing, Michigan, USA, 01/17/2001

Cranked relativistic mean field theory: superdeformation, time-odd fields etc.

16. Argonne National Laboratory, Illinois, USA, 01/22/2001

Cranked Relativistic Hartree-Bogoliubov Theory: rotating nuclei in the paired regime

17. Purdue University Calumet, Hammond, Indiana, USA, 03/22/2001

Rotating nuclei at extreme conditions: theoretical outlook

18. Department of Physics and Astronomy, University of Tennessee, Knoxville, USA, 04/16/2001
Time-odd fields in the rotating frame and the moments of inertia
19. Physics Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA, 04/18/2001
Rotating nuclei in the relativistic mean field theory: on the edge of the N=Z line
20. Department of Physics, Florida State University, Tallahassee, USA, 05/11/2001
Cranked relativistic mean field theory: microscopic understanding of rotation.
21. Department of Physics, University of Notre Dame, USA, 05/24/2001
Rotating $N \sim Z$ nuclei in the conventional models: how strong is evidence for proton-neutron pairing?
22. Argonne National Laboratory, Physics Division, USA, Heavy Ion Discussion Group, 11/12/2001
The basis of relativistic mean field theory
23. Argonne National Laboratory, Physics Division, USA, Heavy Ion Discussion Group, 02/04/2002
Cranked Relativistic Hartree-Bogoliubov Theory: Probing the Gate to Super-Heavy nuclei
24. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California, USA, 02/08/2002
Proton-neutron pairing in $N \approx Z$ nuclei: do rotating properties provide strong evidence for it?
25. Argonne National Laboratory, Physics Division, USA, 05/02/2002
Covariant Density Functional Theory and Applications to Nuclei at Extremes
26. Department of Physics, University of Notre Dame, USA, 06/10/2002
Probing the gateway to superheavy nuclei
27. Department of Physics, College of Physical and Engineering Science, University of Guelph, Canada, 03/25/2003
Relativistic mean field theory and exotic nuclear phenomena
invited colloquium (60 minutes)
28. Department of Physics, University of Notre Dame, USA, 06/02/2003
Theoretical Nuclear Structure: starting from basic
29. Department of Physics, University of Notre Dame, USA, 06/23/2003
Relativistic Mean Field theory: modern tool of nuclear structure studies
30. A. W. Wright Nuclear Structure Laboratory, University of Yale, USA, 10/21/2003
From Nobelium region towards superheavy nuclei

31. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California, USA, 02/24/2004
Cranked Relativistic Hartree-Bogoliubov theory: going from nobelium ($A \sim 250$) region towards super-heavy nuclei
32. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California, USA, 02/24/2004
Dominance of the isovector ($t=1$) neutron-proton pairing in rotating $N \sim Z$ nuclei
33. Institute of Solid State Physics, University of Latvia, Latvia, 06/15/2004
Hunting superheavy nuclei
34. Department of Mathematical Physics, Lund Institute of Technology, Lund, Sweden, 06/17/2004
Relativistic Hartree-Bogoliubov theory: from nobelium region towards superheavy nuclei
35. Department of Mathematical Physics, Lund Institute of Technology, Lund, Sweden, 06/18/2004
Isovector ($t=1$) or isoscalar ($t=0$) neutron-proton pairing in rotating $N \sim Z$ nuclei???
36. Department of Physics, University of Notre Dame, Notre Dame, 10/14/2004
Cranked Hartree-Bogoliubov theory: the journey towards nuclear limits
37. Department of Physics, Florida State University, Tallahassee, USA, 10/22/2004
Superheavy nuclei: theoretical outlook.
38. Department of Physics and Astronomy, Mississippi State University, Starkville, Mississippi, USA, 1/13/2005
Nuclear Limits and Relativistic Hartree Bogoliubov theory
 colloquium
39. Department of Physics, San Diego State University, California, USA, 3/4/2005
Nuclei at the Limits: Forget “Schroedinger”, let do “Dirac”
 colloquium
40. Department of Physics, San Diego State University, California, USA, 3/3/2005
Relativistic Hartree-Bogoliubov (RHB) Theory: Today and in the future.
 seminar
41. Physics Division, Argonne National Laboratory, Argonne, Illinois, USA, 03/28/2005
Rotating structures along the $N=Z$ line: what do we really learn from them?
 seminar
42. Department of Physics, University of Notre Dame, Notre Dame, USA, 03/30/2005

Nuclei at the limits

colloquium

43. Institute of Solid State Physics, University of Latvia, Latvia, 06/01/2005

Atomic nuclei through the “Relativistic mean field” microscope

seminar [60 min]

44. Department of Physics, University of Tennessee, Knoxville, USA, 02/20/2006

Superheavy nuclei in relativistic mean field theory

seminar [60 min]

45. Physics Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA, 02/21/2006
Rotating $N \approx Z$ nuclei: proton-neutron pairing and non-termination of rotational bands

seminar [60 min]

46. Physics Tea presentation, Department of Physics and Astronomy, Mississippi State University, USA, 04/20/20

The life and death of rotational bands

40 min

47. Michigan State University, NSCL/Cyclotron Laboratory, East Lansing, Michigan, USA, 05/12/2005

Superheavy nuclei: a microscopic view

invited seminar [80 min]

48. Jackson State University, Jackson, Mississippi, USA, 10/09/2006

Nuclear exotica

invited seminar 45 minutes

49. Florida State University, March 15, 2007

Physics in the vicinity of the $N = Z$ line: a current status.

invited seminar [60 min]

50. Physics Division, Argonne National Laboratory, Argonne, Illinois, USA, 09/24/2007

Band Termination revisited

invited seminar [60 min]

51. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California, USA, 02/07/2008

Nuclear extremes in the relativistic mean field theory: hyperdeformation and superheavy nuclei. Part 1: Hyperdeformation in the $Z = 40 - 58$ part of nuclear chart

invited seminar [60 min]

52. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California,

USA, 02/08/2008

Nuclear extremes in the relativistic mean field theory: hyperdeformation and superheavy nuclei. Part 2: Superheavy nuclei

seminar [60 min]

53. RIKEN Nishina Center for Accelerator-Based Science, Japan, 05/12/2008

The next frontier: hyperdeformation

seminar [60 min]

54. RIKEN Nishina Center for Accelerator-Based Science, Theory group seminar, Japan, 05/16/2008

Few words about time-odd mean fields

seminar [80 min]

55. Yukawa Institute of Theoretical Physics, Kyoto University, Japan, 05/23/2008.

Time-odd mean fields in density functional theories

seminar [60 min]

56. Division of Mathematical Physics, Lund Institute of Technology, Lund, Sweden, 06/18/2008

Hyperdeformation: a microscopic study

seminar [60 min]

57. Physik-Department der Technischen Universität München, Garching, Germany, 08/10/2008

The next frontier - hyperdeformation: A study within the covariant density functional theory

colloquium [60 min]

58. Institute of Solid State Physics, University of Latvia, Latvia, 06/16/2008

Recent progress in the study of rotating nuclei within the relativistic framework

seminar [60 min]

59. Department of Physics, University of Padova, Italy, 09/15/2008

Challenges in high-spin physics: theoretical perspective

seminar [60 min]

60. Physics Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA, 03/19/2009

Probing nuclear extremes with covariant density functional theory

invited seminar [60 min]

61. Department of Physics and Astronomy, University of Thessaloniki, Greece, 06/19/2009

Recent progress in covariant density functional theory

invited seminar [60 min]

62. Flerov's Laboratory of Nuclear Reactions, Joint Institute for Nuclear Research, Dubna, Russia, 06/29/2009

Superheavy nuclei in covariant density functional theory

invited all-lab scientific seminar [70 min]

63. Institute of Solid State Physics, University of Latvia, Latvia, 07/07/2009

Covariant density functional theory: nuclear magnetism and its role

invited seminar [60 min]

64. Department of Physics, University of Alabama, Tuscaloosa, USA, 01/13/2010.

Covariant density functional theory: the framework and applications to nuclear structure and nuclear astrophysics.

invited colloquium [50 min]

65. Physics Division, Argonne National Laboratory, Argonne, Illinois, USA, 04/26/2010

Recent advances in covariant density functional theory

invited seminar [60 min]

66. Division of Mathematical Physics, Lund Institute of Technology, Lund, Sweden, 05/19/2010

The physics of time-odd mean fields

invited seminar [70 min]

67. Physik-Department der Technischen Universität München, Garching, Germany, 05/27/2010

Understanding superheavies through the prism of heavies.

invited colloquium [60 min]

68. Institute of Solid State Physics, University of Latvia, Latvia, 06/04/2010

Nuclear burning in neutron star crust

invited seminar [70 min]

69. Department of Physics, University of Tennessee, Knoxville, USA, 10/18/2010

Time-odd mean fields in non-rotating and rotating nuclei

invited seminar [60 min]

70. Institute of Solid State Physics, University of Latvia, Latvia, 06/13/2011

Nuclear energy density functionals: from collective to single-particle degrees of freedom.

invited seminar [60 min]

71. Mississippi State University, Starkville, USA, 11/31/2011

Neutron stars: nuclear burning in the crust.

colloquium [60 min]

72. Physics Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA, 03/15/2012

Heavy and superheavy nuclei in relativistic framework.

invited seminar [65 min]

73. Lawrence Berkeley National Laboratory, Nuclear Science Division, Berkeley, California, USA, 03/19/2012
Recent progress in covariant density functional theory.
seminar [60 min]
74. Department of Physics, University of Tennessee, Knoxville, USA, 04/23/2012
Single-particle degrees of freedom in covariant density functional theory
invited seminar [60 min]
75. Division of Mathematical Physics, Lund Institute of Technology, University of Lund, Lund, Sweden, 05/21/2012,
Nuclear density functional theory: single-particle motion
invited seminar [70 min]
76. Institute of Solid State Physics, University of Latvia, Latvia, 05/30/2012
Superheavy elements: current status and future.
invited colloquium [70 min]
77. Department of Physics, University of Padova, Italy, 06/07/2012
Covariant density functional theory: heavy and superheavy nuclei.
invited seminar [55 min]
78. Institut de Recherches Subatomiques, Unite mixte de Recherche CNRS-IN2P3 et Universite Louis Pasteur, Strasbourg, France, 06/12/2012
Recent progress in covariant DFT: time-odd mean fields and single-particle degrees of freedom
invited seminar [60 min]
79. Mississippi State University, Department of Physics, Starkville, USA, 10/25/2012
Theoretical/computational low-energy nuclear physics: personal perspective [current status and future]
invited seminar [55 min]
80. Washington University in St. Louis, Department of Chemistry, Saint Louis, USA, 11/16/2012
Covariant density functional theory: from single-particle degrees of freedom to fission
invited seminar [55 min]
81. Physics Division, Argonne National Laboratory, Lemont, Illinois, USA, 11/19/2012
Covariant density functional theory: addressing the challenges
invited seminar [60 min]
82. National Superconducting Cyclotron Laboratory, Michigan State University, Lansing, USA, 03/12/2013
Covariant density functional theory: from single-particle to collective degrees of

freedom

invited seminar [55 min]

83. Institute of Solid State Physics, University of Latvia, Latvia, 05/22/2013

Theoretical nuclear physics in the age of high performance computing

invited seminar [60 min]

84. Department of Technical Physics, Peking University, Beijing, China, 12/23/2013

Rotating nuclei as a probe of covariant density functional theory

colloquium [80 min]

85. Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing, China, 12/25/2013

Single-particle degrees of freedom in covariant density functional theory: successes and challenges

seminar [90 min]

14 Outreach presentations

1. Presentation of lecture “**Nuclear Physics for Nuclear Astrophysics**” at the MSU meeting for students from the Mississippi School for Mathematics and Science”, 10/11/2005.

2. Teacher Reception Presentation at 25th Annual High School Competition, MSU, 02/24/2006

15 Member of advisory boards of international conferences and workshops

1. 19th Nuclear Physics Workshop ”Marie Pierre Curie”, Kazimierz, September 2012, Poland.

2. 20th Nuclear Physics Workshop ”Marie Pierre Curie”, Kazimierz, September 25-29, 2013, Poland.

16 Chair of the sections at the International conferences or workshops

1. Section “Nuclear structure 10” at the International conference “Nuclear Structure and Dynamics”, Dubrovnik, Croatia, May 4-8, 2009.

2. International symposium “Advances in Nuclear Many-Body Theory”, Primosten, Croatia, June 7-10, 2011.

3. YIPQS Long-term workshop “Dynamics and correlations in exotic nuclei (DCEN2011)”, Yukawa Institute for Theoretical Physics, Kyoto, Japan, September 20 - October 28, 2011

4. 20th Nuclear Physics Workshop “Marie & Pierre Curie”, September 25-30, 2013, Kazimierz, Poland
5. The 2^d CUSTIPEN Workshop on “Advances in the computational nuclear many-body problem”, December 15-17, 2013, Beijing, Peking University, China
6. American Physical Society meeting, April 5-8, 2014, Savannah, Georgia, USA, section “Nuclear Theory II”
7. Fourth workshop “Nuclei and Mesoscopic Physics 2014”, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA, May 5-9, 2014

References

List of Publications of A. Afanasjev ²

17 Review articles

- [1] **A. V. Afanasjev**, D. B. Fossan, G. J. Lane and I. Ragnarsson
Termination of Rotational Bands: Disappearance of Quantum Many-body Collectivity
Physics Reports 322 (1999) 1-124
- [2] D. Vretenar, **A. V. Afanasjev**, G. A. Lalazissis, and P. Ring
Relativistic Hartree-Bogoliubov Theory: Static and Dynamic Aspects of Exotic Nuclear Structure
Physics Reports 409 (2005) 101-259
- [3] **A. V. Afanasjev**,
Isoscalar and isovector neutron-proton pairing
chapter 11 in the book “Fifty Years of Nuclear BCS: Pairing in Finite Systems” (World Scientific Publishing Co, 2013, editors R. A. Broglia and V. Zelevinsky,) p. 138-153, written on invitation of Editors.

18 Publications in refereed journals

- [4] T. V. Guseva, **A. V. Afanasjev**, J. J. Tambergs and M. K. Balodis,
Residual unpaired-nucleon interaction in ¹⁵⁴Eu,
Bull.Acad.Sc.USSR (ser.phys.)³ 51 (1987) 17-22 (in English),
Izv.Akad.Nauk SSSR (Ser.Fiz.) 51 (1987) 856-862 (in Russian)
- [5] **A. V. Afanasjev**, T. V. Guseva and J. J. Tambergs,
Rotational-vibrational model for odd-odd nuclei,
Bull.Acad.Sc.USSR (ser.phys.) 52 (1988) 121-125 (in English)
Izv.Akad.Nauk SSSR (Ser.Fiz.) 52 (1988) 130-135 (in Russian)
- [6] M. K. Balodis, **A. V. Afanasjev**, P. T. Prokofjev and J. J. Tambergs,
 γ -vibrational band in odd-odd nucleus ¹⁶⁶Ho,
Bull.Acad.Sc.USSR (ser.phys.) 52 (1988) 35-40 (in English)
Izv.Akad.Nauk SSSR (Ser.Fiz.) 52 (1988) 2117-2122 (in Russian)
- [7] **A. V. Afanasjev**, T. V. Guseva and J. J. Tambergs,
Rotational-vibrational model of nuclei with allowance for two-quasi-particle states,

²“A. V. Afanasjev” or “Anatoli Afanasjev” are the spellings of my name in the publications

³Izv. Akad. Nauk SSSR (ser.phys.) (Russian edition) was translated by American Institute of Physics as Bulletin of Academy of Sciences of USSR (ser.phys.) (English edition)

- Bull.Acad.Sc.USSR (ser.phys.) 53 (1989) 52-55 (in English)
Izv. Akad. Nauk SSSR (Ser.Fiz.) 53 (1989) 54-57 (in Russian)
- [8] **A. V. Afanasjev**, D. O. Kalninsh and B. J. Sermulinja,
The radiative loop influence on nuclear reactor active zone characteristics,
Izv. Acad. of Sciences of Latv. SSR (ser.phys. and tech. sc.), 1 (1989) 118-120 (in Russian)
- [9] **A. V. Afanasjev**, T. V. Guseva, J. J. Tambergs and M. K. Balodis,
Octupole deformation of nuclei of Eu isotopes
Bull.Acad.Sc.USSR (ser.phys.) 54 (1990) 171-177 (in English)
Izv. Akad. Nauk SSSR (Ser.Fiz.) 54 (1990) 1838-1844 (in Russian)
- [10] **A. V. Afanasjev**, T. V. Guseva and J. J. Tambergs,
Rotational model of octupole deformed odd-odd nuclei,
Bull.Acad.Sc.USSR (ser.phys.) 55 (1991) 139-145 (in English)
Izv. Akad. Nauk SSSR (Ser.Fiz.) 55 (1991) 2223-2229 (in Russian)
- [11] M. K. Balodis, N. D. Kramer, P. T. Prokofjev, **A. V. Afanasjev**, T. V. Guseva, J. J. Tambergs, K. Schreckenbach, W. F. Davidson, D. D. Warner, J. A. Pinston, P. H. M. van Assche and A. M. J. Spits,
Level structure of the odd-odd nucleus ^{156}Eu ,
Nuclear Physics A523 (1991) 261-299
- [12] P. T. Prokofjev, L. I. Simonova, M. K. Beitins, M. K. Balodis, **A. V. Afanasjev** and G. L. Rezvaja
Gamma-ray spectra of ^{183}W from the (n, γ) and $(n, n'\gamma)$ reactions
Latvian Journal of Physics and Technical Sciences, v.4 (1993) 3-16
- [13] **A. V. Afanasjev**,
Evidence for the existence of reflection asymmetric shape at high spin in the odd-proton ^{151}Pm , ^{153}Eu nuclei,
Journal of Physics G: Nuclear and Particle Physics 19 (1993) L143-L150
- [14] **A. V. Afanasjev** and I. Ragnarsson,
Microscopic structure of high-spin spectra of selected $A \sim 90$ nuclei near proton-drip line
Physica Scripta **T 56** (1995) 220-223
- [15] **A. V. Afanasjev** and I. Ragnarsson,
Existence of intrinsic reflection asymmetry at low spin in odd and odd-odd mass nuclei in the Pm/Eu region
Physical Review **C 51** (1995) 1259-1264
- [16] **A. V. Afanasjev** and I. Ragnarsson,
The high-energy cost for building states with $I \sim 30\hbar$ in $Z > 40$, $N < 50$ nuclei
Nuclear Physics **A 586** (1995) 377-395

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Strong population of a superdeformed band in ^{142}Eu
Physical Review C **52** (1995) 99-103
- [18] **A. V. Afanasjev** and I. Ragnarsson,
Gradual Loss of Collectivity in Rotational Bands in the $A \sim 110$ ($Z \geq 50$, $N \sim 60$) mass region
Nuclear Physics **A591** (1995) 387-420
- [19] **A. V. Afanasjev** and S. Mizutori,
Octupole correlations at medium spin in odd-proton ^{153}Eu nucleus
Zeitschrift für Physik A: Hadrons and Nuclei, 353 (1995) 267-271
- [20] **A. V. Afanasjev**, J. König and P. Ring
Cranked relativistic mean field description of superdeformed bands in ^{83}Sr ,
Physics Letters B 367 (1996) 11-16
- [21] **A. V. Afanasjev**, I. Ragnarsson and J. M. Sears,
Rotational Bands with $\pi g_{9/2}^{-2}$ Structure in $Z \geq 50$, $N \sim 56 - 65$ Nuclei,
Acta Physica Polonica B, 27 (1996) 187-195
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Shell-Model Influence in the Rotational Nucleus ^{86}Mo
Physical Review C 54 (1996) 117-124
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Coexistence of terminating bands and more collective bands in the $A \sim 100$ region of nuclei,
Zeitschrift für Physik A: Hadrons and Nuclei, A355 (1996) 383-387
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The coexistence of Highly-deformed, Superdeformed and Terminating Bands in the $A \sim 135$ ($Z = 57 - 61$, $N = 72 - 78$) mass region
Nuclear Physics A 608 (1996) 176-201
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Superdeformed Rotational Bands in the $A \sim 140 - 150$ Mass Region: A Cranked Relativistic Mean Field Description
Nuclear Physics A 608 (1996) 107-175
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Lifetime measurements of strongly deformed rotational bands in ^{133}Pm
Physical Review C 54 (1996) 1057-1069

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Smooth termination of intruder bands in $^{109}_{51}\text{Sb}$
 Physical Review C 54 (1996) 1598-1609
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Collective structures and smooth band termination in ^{109}Sn
 Zeitschrift für Physik A: Hadrons and Nuclei, A 356 (1996) 235
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Differential lifetime measurements and configuration-dependent quadrupole moments for superdeformed bands in nuclei near ^{152}Dy
 Physics Letters B 392 (1997) 18
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Nuclear structure of ^{183}W studied in (n, γ) , $(n, n'\gamma)$ and (d, p) reactions
 Nuclear Physics A 614 (1997) 183-216
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Identification of excited states in doubly-odd ^{110}Sb : Smooth band termination
 Physical Review C 55 (1997) R2127-R2131
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High-spin spectroscopy of $^{116}_{52}\text{Te}$
 Physical Review C 55 (1997) 2290-2304
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Nuclear levels in ^{187}W
 Nuclear Physics A 619 (1997) 1-48
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Band terminations in valence-space and core-excited configurations in ^{102}Pd
 Acta Phys. Hung. N.S. 6 (1997) 265-269
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Cranked Relativistic Mean Field Description of Superdeformed Rotational Bands
 Acta Phys. Hung. N.S. 6 (1997) 299-304
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Evidence for multiple band terminations in ^{102}Pd
 Physics Letters B 410 (1997) 95-102
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Observation and Quadrupole-Moment Measurement of the First Superdeformed Band in the $A \sim 60$ Mass Region
 Physical Review Letters 79 (1997) 1233-1237
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Relativistic Description of High Spin States
 Progress in Particle and Nuclear Physics, vol. 38 (1997) 137-146
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Triaxial Superdeformed Bands in ^{86}Zr
 Physical Review C 57 (1998) R1-R5
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Decreasing Collectivity in Smoothly Terminating Bands in the $A \sim 110$ Region
 Physical Review Letters 80 (1998) 1174
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