Curriculum Vitae

Georgi Ivanov Rainovski

Date and place of birth:

June 7 1970, Botevgrad, Bulgaria

Nationality:

Bulgarian

Education, degrees and occupation (other than University):

July 2001: Ph.D. degree in Nuclear Physics from the Scientific Council for Nuclear Physics, Particle Physics and Astronomy of the Bulgarian Higher Testimonial Commission. Thesis "Collective and single-particle excitations in the transitional nuclei ^{123,124}I and ^{123}Xe";

January 1997 – August 2000: Ph.D. student at the Faculty of Physics, St. Kliment Ohridski University of Sofia;

June 1996 - M.Sc. degree in Physics (Nuclear and Particle physics) from the University of Sofia. Diploma thesis "Band termination in ^{123}I";

October 1990- July 1996 - student at the Faculty of Physics of the University of Sofia;

September 1988 – August 1990 - soldier in the Bulgarian Army;

1985 – 1988 - student at the High School of Mathematics and Natural Science in Botevgrad, Bulgaria;

Marital Status

Apr. 11, 1992 married Maya Angelova Raynovska (born Tepavicharova)
Sep. 27, 1992 born son Ivan Georgiev Rainovski

Languages

Bulgarian – mother tongue
English – spoken, written
Russian – spoken, written

e-mail: rig@phys.uni-sofia.bg
web: http://atomic.phys.uni-sofia.bg/local/nsg/rig_web

Career/Employment

- **University positions**

June 2007 - present
Associate Professor of Nuclear Physics at the Faculty of Physics, St. Kliment Ohridski University of Sofia;

December 2003 – June 2007
Head Assistant Professor of Nuclear Physics at the Faculty of Physics, St. Kliment Ohridski University of Sofia;

01.09.2000 – December 2003
Assistant Professor of Nuclear Physics at the Faculty of Physics, St. Kliment Ohridski University of Sofia;

- **Other Academic and Research Positions**

March 2010 – September 2011
Humboldt research fellow (experienced researcher) at TU Darmstadt, Germany.

April 2004 – March 2006
Post-doc research associate at the Nuclear Structure Laboratory, Department of Physics and Astronomy, State University of New York at Stony Brook, Stony Brook NY 11794-3800

January 2002 – October 2003
Research associate at the Department of Physics, Oliver Lodge Laboratory, Oxford Street, Liverpool L69 7ZE United Kingdom;

July – October 2001
Guest Scientist at the Institut für Kern- und Hadronenphysik, Forschungzentrum Rossendorf, 01314 Dresden, Germany;

October – December 2000
Guest Scientist at the Institut für Kern- und Hadronenphysik, Forschungzentrum Rossendorf, Germany;

September 1999 – July 2000
Guest Scientist (DAAD grant) at the Institut für Kern- und Hadronenphysik, Forschungzentrum Rossendorf, 01314 Dresden, Germany;

March – May 1999
Guest Scientist at the Faculty of Physics, University of Istanbul, Turkey;

March – May 1998 - Guest Scientist at the INFN, Milan and University of Camerino, Italy;

Serving the community

- Referee for Physical Review C – since 2004;
- Referee for Journal of Physics G – since 2004;
- Referee for Physics Letters B – since 2011;

References

Prof. Dr. Habil. Norbert Pietralla

Address: Institut fuer Kernphysik
Universitaet zu Koeln
Zuelpicher Strasse 77
50937 Koeln
German

tel.: +49 (221) 470 7340
fax: +49 (221) 470 5168
e-mail: pietrall@ikp.uni-koeln.de

Dr. Eddie Paul

Address: The University of Liverpool
Department of Physics
Oliver Lodge Laboratory
Oxford Street
Liverpool L69 7ZE, United Kingdom

tel.: +44 151 794 7656
fax: +44 151 794 6772
e-mail: esp@ns.ph.liv.ac.uk

Prof. Paul Nolan

Address: The University of Liverpool
Department of Physics
Oliver Lodge Laboratory
Oxford Street
Liverpool L69 7ZE, United Kingdom

tel.: +44 151 794 7656
fax: +44 151 794 3348
e-mail: pjn@ns.ph.liv.ac.uk

Dr. Habil. Friedrich Dönau

Address: Institut für Kern- und Hadronenphysik
Forschungzentrum Rossendorf
PF 51 01 19
D-01314 Dresden
Germany

tel.: +49 351 260 3372
fax: +49 351 260 3700
e-mail: F.Doenau@fz-rossendorf.de

Dr. Ronald Schwengner

Address: Institut für Kern- und Hadronenphysik
Forschungzentrum Rossendorf
PF 51 01 19
D-01314 Dresden
Germany

tel.: +49 351 260 3332
fax: +49 351 260 3700
e-mail: rs@fz-rossendorf.de

Scientific activities

2003 – present

Study the valence shell quadrupole collective isovector excitations

This project is concentrated on study of mixed symmetry states in stable and radioactive nuclei in mass A≈130 region. Studies of proton-neutron mixed-symmetry states comprise experimental challenge because they require full spectroscopic information; energy, spins and parities of low-lying, off-yrast states, their static electromagnetic moments and properties of their γ decay have to be measured with high precision. The project includes experiments at NSL, Stony Brook, lifetime measurements at Gammasphere (ANL, USA), REX-ISOLDE (CERN, Switzerland) and GSI (Germany) using Coulomb excitation reactions in inverse kinematics. The main physics aim is to investigate and determine the proton-neutron interaction. We have already shown that these states are sensitive to specific parts of the proton-neutron interaction that cannot be observed and study trough the properties of the fully symmetric states. The project is developing towards identification of such states in radioactive nuclei which requires the use of RIB.

2002 – 2006

Search for chiral twin bands in the mass A≈100-110 region

This study is a natural extension of the activities in mass *A≈120-130*, though it is concentrated on chirality only. It seems that the mass *A≈100-110* is a better chiral region than the mass *A≈120-130*. Moreover it seems that in this region most of the expected chiral fingerprints are observed. This offers a unique possibility to decide the chiral question by measuring the lifetimes of the chiral states. The study includes experiments at NSL, Stony Brook and Gammasphere. The main outcome of this project was related to the absolute transition strengths in the chiral band of $^{102,\ 103}$Rh which were measured by using a inverse kinematic reaction, plunger technique and Gammasphere array at Argonne National Laboratory (USA).

2002 – 2005

Study the magnetic dipole and chiral twin bands in the mass A≈120-130 region

The study is devoted on the tilted symmetries in the region and addresses the following questions: when and how the signature symmetry and the chiral symmetry are broken; how these effects evolve with the mass number and especially what happens when the neutron number approaches N=82? The study includes experiments at EUROBALL IV (IReS, Strasbourg) and Stony Brook Nuclear Structure Laboratory (SUNY, New York) performed in collaboration with gamma-ray spectroscopy groups at the University of Liverpool (UK), the University of York (UK), the State University of New York at Stony Brook (USA).

2002 – 2003

Identification of gamma-rays in nuclei around the drip-line nucleus ^{130}Sm – probing the maximally deformed light rare-earth region

The study is concentrated on utilizing radioactive beams in fusion-evaporation reactions in order to populate high spin states in exotic nuclei. The experiments are done in GANIL (Caen, France) with EXOGAM array. This study involves a large collaboration from UK (the University of York, Daresbury Laboratory, and the University of Manchester), France (Lyon, Orsay, Bordeaux, GANIL) and Hungary (Debrecen). My particular work was related to development of sorting programs (based on MTSort and MIDAS) and analysis of the data.

1999 – 2001

Investigations of nuclei near Z=N line in the mass A≈70-80 region

The study is performed in collaboration with nuclear spectroscopy group at FZ Rossendorf, (Dresden, Germany) and includes data analysis from a EUROBALL III experiment and theoretical interpretation (Ultimate cranking model, Configuration dependent cranking Nilsson-Strutisky model) of the results obtained with EUROBALL III array. As a result we have shown that the ^{70}Se exhibits shape coexistences at high spin.

1999 – 2001

Study of nuclei near N=50 shell closure in the mass A≈90 region

The study is performed in collaboration with nuclear spectroscopy group at FZ Rossendorf and Legnaro National Laboratory. The main aim of the study was to investigate the connection between the regular dipole bands (shears band) in weakly deformed nuclei and multiplets of strong dipole transition in spherical nuclei. I was involved in two GASP experiments, data analysis and theoretical interpretation (Phenomenological Spherical Shell model - RITSSCHIL, Tilted Axis Cranking Model).

1998 - 1999

Spectroscopy of neutron excessive iodine nuclei with A=130 produced in fusion-fission reactions

My work in this study was to design, develop and implement a software package for sorting data from the AFRODITE array (Cape Town, South Africa);

1997 – 2002

Study of nuclei in the mass A≈120-130 region

Study of high-spin structures in ^{123,124}I. Search for band-termination and shape-coexistence in ^{123,124}I and magnetic rotation in ^{123}Xe. In collaboration with INFN Camerino, Italy – data analysis and theoretical interpretation (Tilted axis cranking model);

Publications (in refereed journals only)

Physical Review C 84, 034308 (2011)

In-beam conversion-electron spectroscopy of ^{180}Hg

R. D. Page, A. N. Andreyev, D. R. Wiseman, P. A. Butler, T. Grahn, P. T. Greenlees, R.-D. Herzberg, M. Huyse, G. D. Jones, P. M. Jones, D. T. Joss, R. Julin, S. Juutinen, H. Kankaanpää, A. Keenan, H. Kettunen, P. Kuusiniemi, M. Leino, M. Muikku, P. Nieminen, P. Rahkila, **G.I. Rainovski**, C. Scholey, J. Uusitalo, K. Van de Vel, P. Van Duppen

Physical Review C 83, 044318 (2011)

O(6)-symmetry breaking in the γ -soft nucleus ^{126}Xe and its evolution in the light stable xenon isotopes

L. Coquard, **G. Rainovski**, N. Pietralla, T. Ahn, L. Bettermann, M.P. Carpenter, R.V.F. Janssens, J. Leske, C.J. Lister, O. Möller, T.Möller, W.Rother, V.Werner, S.Zhu

International Journal of Modern Physics E20, 520 (2011)

Chirality in the mass 80 region: ^{79}Kr

T. Koike, S. Kinoshita, Y. Ma, Y. Miura, K. Shirotori, H. Tamura, M. Ukai, T. Suzuki, T. Endo, M. Fujita, Y. Miyashita, M. Ohguma, N. Sato, T. Shinozuka, M. Tateoka, T. Wakui, A. Yamazaki, T. Fukuchi, J. Timar, P. Joshi, T. Ahn, **G. Rainovski**, Y.Y. Fu

Physical Review C 82, 037302 (2010)

Search for one-phonon mixed-symmetry states in the radioactive nucleus ^{140}Nd

K.A. Gladnishki, **G. Rainovski**, P. Petkov, J. Jolie, N. Pietralla, A. Blazhev, A. Damyanova, M. Danchev, A. Dewald, C. Fransen, M. Hackstein, D. Karagyozov, O. Möller, T. Pissulla, M. Reese, W. Rother, R. Topchiyska

Physical Review C 82, 024317 (2010)

Evolution of the mixed-symmetry $2^+_{1,ms}$ quadrupole-phonon excitation from spherical to γ -soft Xe nuclei

L. Coquard, N. Pietralla, **G. Rainovski**, T. Ahn, L. Bettermann, M.P. Carpenter, R.V.F. Janssens, J. Leske, C.J. Lister, O. Möller, W. Rother, V. Werner, S. Zhu

Physics Letters B683, 11 (2010)

How close to the O(6) symmetry is the nucleus 124Xe?

G. Rainovski, N. Pietralla, T. Ahn, L. Coquard, C.J. Lister, R.V.F. Janssens, M.P. Carpenter, S. Zhu, L. Bettermann, J. Jolie, W. Rother, R.V. Jolos, V. Werner

Physical Review C 80, 061304 (2009)

Robust test of E(5) symmetry in ^{128}Xe

L. Coquard, N. Pietralla, T. Ahn, **G. Rainovski**, L. Bettermann, M.P. Carpenter, R.V.F. Janssens, J.Leske, C.J. Lister, O. Moller, W. Rother, V. Werner, S. Zhu

Physics Letters B 679, 19 (2009) (Erratum Phys.Lett. B 682, 490 (2010))

Evolution of the one-phonon $2^+_{1,ms}$ mixed-symmetry state in N=80 isotones as a local measure for the proton-neutron quadrupole interaction

T. Ahn, L. Coquard, N. Pietralla, **G. Rainovski**, A. Costin, R.V.F. Janssens, C.J. Lister, M. Carpenter, S. Zhu, K. Heyde

Physical Review C 80, 044305 (2009)

Magnetic dipole sequences in ^{83}Rb

R. Schwengner, **G. Rainovski**, H. Schnare, A. Wagner, S. Frauendorf, F. Donau, A. Jungclaus, M. Hausmann, O. Yordanov, K.P. Lieb, D.R. Napoli, G.de Angelis, M. Axiotis, N. Marginean, F. Brandolini, C. Rossi Alvarez

Physical Review C 79, 024307 (2009)

Centrifugal stretching along the ground state band of ^{168}Hf

A.Costin, M.Reese, H.Ai, R.F.Casten, K.Dusling, C.R.Fitzpatrick, G.Gurdal, A.Heinz, E.A.McCutchan, D.A.Meyer, O.Moller, P.Petkov, N.Pietralla, J.Qian, **G.Rainovski**, V.Werner

Physics Letters B 669, 19 (2008)

Yrast and non-yrast 2^+ states of ^{134}Ce and ^{136}Nd populated in relativistic Coulomb excitation

T.R. Saito, N. Saito, K. Starosta, J. Beller, N. Pietralla, H.J. Wollersheim, D.L. Balabanski, A. Banu, R.A. Bark, T. Beck, F. Becker, P. Bednarczyk, K.-H. Behr, G. Benzoni, P.G. Bizzeti, C. Boiano, A. Bracco, S. Brambilla, A. Brunle, A. Burger, L. Caceres, F. Camera, F.C.L. Crespi, P. Doornenbal, A.B. Garnsworthy, H. Geissel, J. Gerl, M. Gorska, J. Grebosz, G. Hagemann, J. Jolie, M. Kavatsyuk, O. Kavatsyuk, T. Koike, I. Kojouharov, N. Kurz, J. Leske, G.Lo Bianco, A. Maj, S. Mallion, S. Mandal, M. Maliage, T. Otsuka, C.M. Petrache, Zs. Podolyak, W. Prokopowicz, **G. Rainovski**, P. Reiter, A. Richard, H. Schaffner, S. Schielke, G. Sletten, N.J. Thompson, D. Tonev, J. Walker, N. Warr, O. Wieland, Q. Zhong

Physical Review C 78, **031302 (2008)**

Lifetime measurement of candidate chiral doublet bands in the $^{103,104}Rh$ isotopes with the recoil-distance Doppler-shift method in inverse kinematics

T. Suzuki, **G. Rainovski**, T. Koike, T. Ahn, M.P. Carpenter, A. Costin, M. Danchev, A. Dewald, R.V.F. Janssens, P. Joshi, C.J. Lister, O. Moller, N. Pietralla, T. Shinozuka, J. Timar, R. Wadsworth, C. Vaman, S. Zhu

Nuclear Instruments & Methods in Physics Research A 590, 69 (2008)

Boron foils for RDDS experiment

A.R. Lipski, **G. Rainovski**, N. Pietralla, A. Dewald

Physical Review C 77, 052501 (2008)

Polarization and relaxation rates of radon

E.R. Tardiff, J.A. Behr, T.E. Chupp, K. Gulyuz, R.S. Lefferts, W. Lorenzon, S.R. Nuss-Warren, M.R. Pearson, N. Pietralla, **G. Rainovski**, J.F. Sell, G.D.Sprouse

Physical Review Letters 100, 112502 (2008)

Interplay between Single-Particle and Collective Effects in the Odd-A Cu Isotopes beyond N = 40

I. Stefanescu, G. Georgiev, D.L. Balabanski, N. Blasi, A. Blazhev, N. Bree, J. Cederkall, T.E. Cocolios, T. Davinson, J. Diriken, J. Eberth, A. Ekstrom, D. Fedorov, V.N. Fedosseev, L.M. Fraile, S. Franchoo, K. Gladnishki, M. Huyse, O. Ivanov, V. Ivanov, J. Iwanicki, J. Jolie, T. Konstantinopoulos, Th. Kroll, R. Krucken, U. Koster, A. Lagoyannis, G. Lo Bianco, P. Maierbeck, B.A. Marsh, P. Napiorkowski, N. Patronis, D. Pauwels, **G. Rainovski**, P. Reiter, K. Riisager, M. Seliverstov, G. Sletten, J. Van de Walle, P. Van Duppen, D. Voulot, N. Warr, F. Wenander, K. Wrzosek

Physical Review C 76, 034325 (2007)

Microscopic restoration of proton-neutron mixed symmetry in weakly collective nuclei

J.D. Holt, N. Pietralla, J.W. Holt, T.T.S. Kuo, **G. Rainovski**

Physical Review Letters 98, 102501 (2007)

Effect of γ-softness on the stability of chiral geometry: spectroscopy of ^{106}Ag

P. Joshi, M. P. Carpenter, D. B. Fossan, T. Koike, E. S. Paul, **G. Rainovski**, K. Starosta, C. Vaman, R. Wadsworth

Physical Review C 76, 024307 (2007)

High-spin structure of ^{105}Ag: Search for chiral doublet bands

J. Timar, T. Koike, N. Pietralla, **G. Rainovski**, D. Sohler, T. Ahn, G. Berek, A. Costin, K. Dusling, T.C. Li, E.S. Paul, K. Starosta, C. Vaman

Nuclear Instruments & Methods in Physics Research A 579, 472(2007)

Polarization and relaxation of ^{209}Rn

E.R. Tardiff, T.E. Chupp, W. Lorenzon, S.R. Nuss-Warren, J.A. Behr, M.R. Pearson, K. Gulyuz, R.S. Lefferts, N. Pietralla, **G. Rainovski**, J.F. Sell, G.D. Sprouse

Physical Review C 76, 044315 (2007)

High-spin states in $^{191,193}Au$ and ^{192}Pt: Evidence for oblate deformation and triaxial shapes

Y. Oktem, D. L. Balabanski, B. Akkus, C. W. Beausang, M. Bostan, R. B. Cakirli, R. F. Casten, M. Danchev, M. Djongolov, M. N. Erduran, S. Erturk, K. A. Gladniski, G. Gürdal, J. Tm. Goon, D. J. Hartley, A. A. Hecht, R. Krücken, N. Nikolov, J. R. Novak, **G. Rainovski**, L. L. Riedinger, I. Yigitoglu, N. V. Zamfir,O. Zeidan5

Physical Review C 76, 064302 (2007)

Intrinsic state lifetimes in ^{103}Pd and $^{106, 107}$Cd

S.F. Ashley, P.H. Regan, K. Andgren, E.A. McCutchan, N.V. Zamfir, L. Amon, R.B. Cakirli, R.F. Casten, R.M. Clark, W. Gelletly, G. Gurdal, K.L. Keyes, D.A. Meyer, M.N. Erduran, A. Papenberg, N. Pietralla, C. Plettner, **G. Rainovski**, R.V. Ribas, N.J. Thomas, J. Vinson, D.D. Warner, V. Werner, E. Williams, H.L. Liu, F.R. Xu

Physical Review C 75, **014313 (2007)**

γ -ray multipolarimetry between low-spin states of ^{136}Ce: Search for the $2^+_{1,ms}$ one-phonon mixed-symmetry state

T. Ahn, N. Pietralla, **G. Rainovski**, A. Costin, K. Dusling, T. C. Li, A. Linnemann, S. Pontillo

Physical Review Letters 96, 122501 (2006)

Stabilization of nuclear isovector valence-shell excitations

G. Rainovski, N. Pietralla, T. Ahn, C.J. Lister, R.V.F. Janssens, M.P. Carpenter, S. Zhu, C.J. Barton III

Physical Review C 74, 067301 (2006)

Lifetime measurement for the 2^+_1 state of ^{170}Hf

A. Costin, T. Ahn, B. Bochev, K. Dusling, T. C. Li, N. Pietralla, **G. Rainovski**, W. Rother

Physical Review C 74, 034309 (2006)

Quadrupole moment of the 8^+ yrast state in ^{84}Kr

R. Schwengner, D. L. Balabanski, G. Neyens, N. Benouaret, D. Borremans, N. Coulier, M. De Rydt, G. Georgiev, S. Mallion, **G. Rainovski**, G. Rusev, S. Teughels, and K. Vyvey

Physical Review C 73, 054306 (2006)

First evidence for spin-flip M1 strength in ^{40}Ar

T.C. Li, N. Pietralla, A.P. Tonchev, M.W. Ahmed, T. Ahn, C. Angell, M.A. Blackston, A. Costin, K.J. Keeter, J. Li, A. Lisetskiy, S. Mikhailov, Y. Parpottas, B.A. Perdue, **G. Rainovski**, W. Tornow, H.R. Weller, Y.K. Wu

Phys. Scr. T125, 108 (2006)

Charged particle feeding of hyperdeformed nuclei in the A=118–126 region

B. Herskind, G.B. Hagemann, G. Sletten, Th. Døssing, C. Rønn Hansen, N. Schunck, S. Ødegård, H. Hübel, P. Bringel, A. Bürger, A. Neusser, A.K. Singh, A. Al-Khatib, S.B. Patel, A. Bracco, S. Leoni, F. Camera, G. Benzoni, P. Mason, A. Paleni, B. Million, O. Wieland, P. Bednarczyk, F. Azaiez, Th. Byrski, D. Curien, O. Dakov, G. Duchene, F. Khalfallah, B. Gall, L. Piqeras, J. Robin, J. Dudek, N. Rowley, B.M. Nyak´o, A. Algora, Z. Dombradi, J. Gal, G. Kalinka, D. Sohler, J. Molnár, J. Timár, L. Zolnai, K. Juhász, N. Redon, F. Hannachi, J.N. Scheurer, J.N. Wilson, A. Lopez-Martens, A. Korichi, K. Hauschild, J. Roccaz, S. Siem, P. Fallon, I.Y. Lee, A. Görgen, A. Maj, M. Kmiecik, M. Brekiesz, J. Styczen, K. Zuber, J.C. Lisle, B. Cederwall, K. Lagergren, A.O. Evans, **G. Rainovski**, G. De Angelis, G. La Rana, R. Moro, W. Gast, R.M. Lieder, E. Podsvirova, H. Jäger, C.M. Petrache, D. Petrache

Physical Review C 74, 014305 (2006)

Competition between collective and noncollective excitation modes at high spin in ^{124}Ba

A. Al-Khatib, A.K. Singh, H. Hubel, P. Bringel, A. Burger, J. Domscheit, A. Neusser-Neffgen, G. Schonwasser, G.B. Hagemann, C.R. Hansen, B. Herskind, G. Sletten, J.N. Wilson, J. Timar, A. Algora, Zs. Dombradi, J. Gal, G. Kalinka, J. Molnar, B.M. Nyako, D. Sohler, L. Zolnai, R.M. Clark, M. Cromaz, P. Fallon, I.Y. Lee, A.O. Macchiavelli, D. Ward, H. Amro, W.C. Ma, M. Kmiecik, A. Maj, J. Styczen, K. Zuber, K. Hauschild, A. Korichi, A. Lopez-Martens, J. Roccaz, S. Siem, F. Hannachi, J.N. Scheurer, P. Bednarczyk, Th. Byrski, D. Curien, O. Dorvaux, G. Duchene, B. Gall, F. Khalfallah, I. Piqueras, J. Robin, A. Gorgen, K. Juhasz, S.B. Patel, A.O. Evans, **G. Rainovski**, G. Benzoni, A. Bracco, F. Camera, S. Leoni, P. Mason, B. Million, A. Paleni, R. Sacchi, O. Wieland, C.M. Petrache, D. Petrache, G. La Rana, R. Moro, G.De Angelis, J.C. Lisle, B. Cederwall, K. Lagergren, R.M. Lieder, E. Podsvirova, W. Gast, H. Jager, N. Redon

Physical Review C 73, 014317 (2006)

Medium-spin γ-ray spectroscopy of transitional nucleus ^{160}Er

K. Dusling, N. Pietralla, **G. Rainovski**, T. Ahn, B. Bochev, A. Costin, T. Koike, T. C. Li, A. Linnemann, S. Pontillo, and C. Vaman

Physical Review C 72, 064315 (2005)

Evidence for octupole correlations in $^{124,125}Ba$

P. Mason, G. Benzoni, A. Bracco, F. Camera, B. Million, O. Wieland, S. Leoni, A. K. Singh, A. Al-Khatib, H. Hübel, P. Bringel, A. Bürger, A. Neusser, G. Schönwasser, B. M. Nyakó, J. Timár, A. Algora, Zs. Dombrádi, J. Gál, G. Kalinka, J. Molnár, D. Sohler, L. Zolnai, K. Johász, G. B. Hagemann, C. R. Hansen, B. Herskind, B. Sletten, M. Kmiecik, A. Maj, J. Styczen, K. Zuber, F. Azaiez, K. Hauschild, A. Korichi, A. Lopez-Martens, J. Roccaz, S. Siem, F. Hannachi, J. N. Scheurer, P. Bednaraczyk, Th. Byrski, D. Curien, O. Dorvaux,

G. Duchêne, B. Gall, F. Khalfallah, I. Piqueras, J. Robin, S. B. Patel, O. A. Evans, **G. Rainovski**, C. M. Petrache, D. Petrache, G. La Rana, R. Moro, G. De Angelis, P. Fallon, I.-Y. Lee, J. C. Lisle, B. Cederwall, K. Lagergen, R. M. Lieder, E. Podsvirova, W. Gast, H. Jäger, N. Redon, and A. Görgen

Physical Review C 72, 054305 (2005)
Subnanosecond lifetime measurement for the T=0,3 state of odd-odd N = Z ^{58}Cu
A. Costin, N. Pietralla, T. Koike, C. Vaman, T. Ahn, and **G. Rainovski**

Physical Review C 72, 029801 (2005)
Comment on "Probing nuclear structure of ^{124}Xe"
G. Rainovski, D. L. Balabanski, and V. I. Dimitrov

J. Phys. G: Nucl. Part. Phys. 31 No 10 (October 2005) S1741-S1746
Recent progress on the investigation of spontaneous formation of chirality in rotating nuclei
T Koike, K Starosta, P Joshi, **G Rainovski**, J Timár, C Vaman and R Wadsworth

J. Phys. G: Nucl. Part. Phys. 31 No 10 (October 2005) S1895-S1898
Evidence for a new region of chirality around A ~ 104
P Joshi, S Finnigan, D B Fossan, T Koike, E S Paul, **G Rainovski**, K Starosta, C Vaman and R Wadsworth

J. Phys. G: Nucl. Part. Phys. 31 No 10 (October 2005) S1563-S1568
RDM lifetime measurements in ^{107}Cd
K Andgren, S F Ashley, P H Regan, E A McCutchan, N V Zamfir, L Amon, R B Cakirli, R F Casten, R M Clark, G Gürdal, K L Keyes, D A Meyer, M N Erduran, A Papenberg, N Pietralla, C Plettner, **G Rainovski**, R V Ribas, N J Thomas, J Vinson, D D Warner, V Werner and E Williams

Physical Review C 71, 064302 (2005)
High-spin structure of ^{102}Ru
D. Sohler, J. Timár, **G. Rainovski**, P. Joshi, K. Starosta, D. B. Fossan, J. Molnár, R. Wadsworth, A. Algora, P. Bednarczyk, D. Curien, Zs. Dombrádi, G. Duchene, A. Gizon, J. Gizon, D. G. Jenkins, T. Koike, A. Krasznahorkay, E. S. Paul, P. M. Raddon, J. N. Scheurer, A. J. Simons, C. Vaman, A. R. Wilkinson, L. Zolnai

Physical Review C 71, 054309 (2005)
Highest spin discrete levels in ^{131,132}Ce: Spin generation near the mesoscopic limit
E. S. Paul, P. T. W. Choy, C. Andreoiu, A. J. Boston, A. O. Evans, C. Fox, S. Gros, P. J. Nolan, **G. Rainovski**, J. A. Sampson, H. C. Scraggs, A. Walker, D.

E. Appelbe, D. T. Joss, J. Simpson, J. Gizon, A. Astier, N. Buforn, A. Prévost, N. Redon, O. Stézowski, B. M. Nyakó, D. Sohler, J. Timár, L. Zolnai, D. Bazzacco, S. Lunardi, C. M. Petrache, P. Bednarczyk, D. Curien, N. Kintz, and I. Ragnarsson

Physical Review C 71, 044318 (2005)

One-phonon $2^+_{1,ms}$ mixed –symmetry state of ^{148}Sm observed in nuclear resonance fluorescence

T.C. Li, N. Pietralla, C. Fransen, H. von Garrel, U. Kneissl, C. Kohstall, A. Linnemann, H.H. Pitz, **G. Rainovski**, A. Richter, M. Scheck, F. Stedile, P. von Brentano, P. von Neumann-Cosel, V. Werner

Physical Review C 71, 034318(2005)

"Quasi-γ band and odd-even staggering effect in ^{102}Ru"

S. Lalkovski, **G. Rainovski**, K. Starosta, M. P. Carpenter, D. B. Fossan, S. Finnigan, S. Ilieva, P. Joshi, T. Koike, E. S. Paul, N. Pietralla, C. Vaman, and R. Wadsworth

Acta Physica Polonica B36, 1029 (2005)

High-spin states in ^{124}Ba

A. Al-Khatib, A.K. Singh, H. Hubel, P. Bringel, A. Burger, A. Neusser, G. choenwasser, G.B. Hagemann, C.R. Hansen, B. Herskind, G. Sohler, J. Timar, L. Zolnai, M. Kmiecik, A. Maj, J. Styczen, K. Zuber, K. Hauschild, A. Korichi, A. Lopez-Martens, J. Roccaz, S. Siem, F. Hannachi, J.N. Scheurer, P. Bednarczyk, Th. Byrski, D. Curien, O. Dorvaux, G. Duchene, B. Gall, F. Khalfallah, I. Piqueras, J. Robin, K. Juhasz, S.B. Patel, A.O. Evans, **G. Rainovski**, A. Airoldi, G. Benzoni, A. Bracco, F. Camera, B. Million, P. Mason, A. Paleni, R. Sacchi, O. Wieland, C.M. Petrache, D. Petrache, G. La Rana, R. Moro, G. De Angelis, P. Fallon, I.-Y. Lee, J.C. Lisle, B. Cederwall, K. Lagergren, R.M. Lieder, E. Podsvirova, W. Gast, H. Jaeger, N. Redon, A. Gorgen

Acta Physica Polonica B 36, 1033 (2005)

Search for hyperdeformation in light Xe nuclei

B.M. Nyako, F. Papp, J. Gal, J. Molnar, J. Timar, A. Algora, Zs. Dombradi, G. Kalinka, L. olnai, K. Juhasz, A.K. Singh, H. Hubel, A. Al-Khatib, P. Bringel, A. Burger, A. Neusser, G. Schonwasser, B. Herskind, G.B. Hagemann, C.R. Hansen, G. Sletten, J.N. Scheurer, F. Hannachi, M. Kmiecik, A. Maj, J. Styczen, K. Zuber, K. Hauschild, A. Korichi, A. Lopez-Martens, J. Roccaz, S. Siem, P. Bednarczyk, Th. Byrski, D. Curien, O. Dorvaux, G. Duchene, B. Gall, F. Khalfallah, I. Piqueras, J. Robin, S.B. Patel, A.O. Evans, **G. Rainovski**, A. Airoldi, G. Benzoni, A. Bracco, F. Camera, B. Million, P. Mason, A. Paleni, R. Sacchi, O. Wieland, G.La Rana, R. Moro, C.M. Petrache, D. Petrache, G. De

Angelis, P. Fallon, I.-Y. Lee, J.C. Lisle, B. Cederwall, K. Lagergren, R.M. Lieder, E. Podsvirova, W. Gast, H. Jager, N. Redon, A. Gorgen

The European Physical Journal A 24, 23 (2005)

First evidence for chirality in Tc isotopes: Spectroscopy of ^{100}T

P. Joshi, A.R. Wilkinson, T. Koike, D.B. Fossan, S. Finnigan, E.S. Paul, P.M. Raddon, **G. Rainovski**, K. Starosta, A.J. Simons, C. Vaman, R. Wadsworth

Physics Letters B 598, 178 (2004)

Experimental evidence for chirality in the odd-A ^{105}Rh

J. Timár, P. Joshi, K. Starosta, V.I. Dimitrov, D.B. Fossan, S. Frauendorf, J. Molnár, D. Sohler, R. Wadsworth, A. Algora, P. Bednarczyk D. Curien, Zs. Dombrádi, G. Duchene, J. Gizon, A. Gizon, D. Jenkins, T. Koike, A. Krasznahorkay, E.S. Paul, P. Raddon, **G. Rainovski**, J.N. Scheurer, A. Simons, C. Vaman, T. Wilkinson, L. Zolnai

Physics Letters B 595, 135 (2004)

Stability of chiral geometry in the odd-odd Rh isotopes: Spectroscopy of ^{106}Rh

P. Joshi, D.G. Jenkins, P.M. Raddon, A.J. Simons, R. Wadsworth, A.R. Wilkinson, D.B. Fossan, T. Koike, K. Starosta, C. Vaman, J. Timár, Zs. Dombrádi, A. Krasznahorkay, J. Molnár, D. Sohler, L. Zolnai, A. Algora, E.S. Paul, **G. Rainovski**, J. Gizon, A. Gizon, P. Bednarczyk, D. Curien, G. Duchene, J.N. Scheurer

Eur. Phys. J. A 20, 191 (2004)

Spectroscopic quadrupole moments of high-spin isomers in ^{193}Pb

D.L. Balabanski, M. Ionescu-Bujor, A. Iordachescu, D. Bazzacco, F. Brandolini, D. Bucurescu, S. Chmel, M. Danchev, M.De Poli, G. Georgiev, H. Haas, H. Hubel, N. Marginean, R. Menegazzo, G. Neyens, P. Pavan, **G. Rainovski**, C. Rossi Alvarez, C.A.Ur, K. Vyvey, S. Frauendorf

Physical Review C 70, 034305 (2004)

Quadrupole moments and g factors for high-spin neutron isomers in ^{193}Pb

M. Ionescu-Bujor, A.Iordachescu, D.L. Balabanski, S. Chmel, G. Neyens, G. Baldsiefen, D. Bazzacco, F. Brandolini, D. Bucurescu, M. Danchev, M. De Poli, G. Georgiev, A. Gorgen, H. Haas, H. Hubel, G. Ilie, N. Marginean, R. Menegazzo, P. Pavan, **G. Rainovski**, R.V. Ribas, C. Rossi Alvarez, C.A. Ur, K. Vyvey, S. Frauendorf

Journal of Physics G: Nucl. Part. Phys. 29, 2763 (2003)

Planar and aplanar tilted bands in the odd-odd nucleus ^{132}Cs

G. Rainovski, E.S. Paul, H.J. Chantler, P.J. Nolan, D.G. Jenkins, R. Wadsworth, P. Raddon, A. Simons, D.B. Fossan, T. Koike, K. Starosta, C.

Vaman, E. Farnea, A. Gadea, Th. Kröll, R. Isocrate, G. de Angelis, D. Curien, V.I. Dimitrov

Physical Review C 68, 024318 (2003)

Candidate chiral twin bands in the odd-odd nucleus ^{132}Cs: Exploring the limits of chirality in the mass A≈130 region

G. Rainovski, E.S. Paul, H.J. Chantler, P.J. Nolan, D.G. Jenkins, R. Wadsworth, P. Raddon, A. Simons, D.B. Fossan, T. Koike, K. Starosta, C. Vaman, E. Farnea, A. Gadea, Th. Kröll, R. Isocrate, G. de Angelis, D. Curien, V.I. Dimitrov

Physical Review C 68, 054307 (2003)

Delayed backbanding in $\pi h_{9/2}$ band of ^{187}Ir

M. Danchev, D.L. Balabanski, I. Yigitoglu, B. Akus, C.W. Beausnag, M. Bostan, R.F. Casten, M. Djongolov, N.M. Erduran, S. Erturk, K.A. Gladnishki, G. Gurdal, J. TM. Goon, D.J. Hartley, A.A. Hecht, R. Krücken, J.R. Novak, Y. Oktem, **G. Rainovski**, L.L. Riedinger, N.V. Zamfir, O. Zeidan

Physical Review C 65, 044327 (2002)

High-Spin Structure of the Spherical Nucleus ^{90}Y

G. Rainovski, R. Schwengner, K.D. Schilling, A. Wagner, A. Jungclaus, E. Galindo, O. Thelen, D.R. Napoli, C.A. Ur, G.de Angelis, M. Axiotis, A. Gadea, N. Marginean, T. Martinez, Th. Kröll

Physical Review C 66, 014308 (2002)

Tilted Dipole Bands in $^{123, 124}Xe$

G. Rainovski, D.L. Balabanski, G. Roussev, G.Lo Bianco, G. Falconi, N. Blasi, D. Bazzacco, G.de Angelis, D.R. Napoli, F. Dönau, V.I. Dimitrov

J. Phys. G: Nucl. Part. Phys. 28, 2617 (2002)

Shape coexistence at high spin in the N=Z + 2 nucleus ^{70}Se

G. Rainovski, H. Schnare, R. Schwengner, C. Plettner, L. Kaubler, F. Dönau, I. Ragnarsson, J. Eberth, T. Steinhardt, O. Thelen, M. Hausmann, A. Jungclaus, K.P. Lieb, A. Muller, G.de Angelis, A. Gadea, D.R. Napoli, A. Algora, D.G. Jenkins, R. Wadsworth, A. Wilson, W. Andrejtscheff, V.I. Dimitrov

Physical Review C 66, 024310 (2002)

Magnetic rotation in ^{82}Rb and ^{84}Rb

R. Schwengner, **G. Rainovski**, H. Schnare, A. Wagner, F. Donau, A. Jungclaus, M. Hausmann, O. Iordanov, K.P. Lieb, D.R. Napoli, G.de Angelis, M. Axiotis, N. Marginean, F. Brandolini, C. Rossi Alvarez

Nuclear Physics A 708, 167 (2002)

Beta Decay of Medium and High Spin Isomers in ^{94}Ag

M.La Commara, K. Schmidt, H. Grawe, J. Doring, R. Borcea, S. Galanopoulos, M. Gorska, S. Harissopulos, M. Hellstrom, Z. Janas, R. Kirchner, C. Mazzocchi, A.N. Ostrowski, C. Plettner, **G. Rainovski**, E. Roeckl

Physical Review C 63, 064315 (2001)

Structure of High-Spin States in ^{89}Sr and ^{90}Sr

E.A. Stefanova, R. Schwengner, **G. Rainovski**, K.D. Schilling, A. Wagner, F. Dönau, E. Galindo, A. Jungclaus, K.P. Lieb, O. Thelen, J. Eberth, D.R. Napoli, C.A. Ur, G.de Angelis, M. Axiotis, A. Gadea, N. Marginean, T. Martinez, Th. Kröll, T. Kutsarova

Acta Phys. Hung.N.S. 12, 211 (2000)

Tilted Three-Quasiparticle Band in ^{123}Xe

G. Rainovski, G.Lo Bianco, D.L. Balabanski, G. Roussev, G. Falconi, N. Blasi, D. Bazzacco, G.de Angelis, D.R. Napoli, M.A. Cardona, A.J. Kreiner, H. Somacal, V.I. Dimitrov, J.-Y. Zhang, F. Dönau

Reports of Bulgarian Academy of Science 3, 12 (2000)

Is there a Coexistence of Low-K Prolate and High-K Oblate $\pi h_{11/2}$ Orbitals in ^{123}I?

G. Rainovski, D.L. Balabanski, G. Lo Bianco, G. Falconi, N. Blasi D. Bazzacco, G. de Angelis, D.R. Napoli, M.A. Cardona, A.J. Kreiner, H. Somacal

The European Physical Journal A 8, 303 (2000)

Beta Decay of ^{93}Pd

K. Schmidt, C. Mazzocchi, R. Borcea, J. Döring, S. Galanopoulos, M. Gorska, H. Grawe, S. Harissopulos, M. Hellstrom, Z. Janas, R. Kirchner, G. Kriembardis, M.La Commara, A. Ostrowski, **G. Rainovski**, E. Roeckl

Acta Phys. Hung. N.S. 6, 275 (1997)

"Excited States and Terminating Bands in $^{123,124}I$"

D. L. Balabanski, **G. Rainovski**, N. Blasi, G. Lo Bianco, G. Falconi, S. Signorelli, D. Bazzacco, G. de Angelis, D. R. Napoli, M. A.Cardona, A. J. Kreiner, H. Somacal

Physical Review C 56, 1629 (1997)

Band Termination in ^{123}I

D. L. Balabanski, **G. Rainovski**, N. Blasi, G. Falconi, G. Lo Bianco, S. Signorelli, D. Bazzacco, G. de Angelis, D. R. Napoli, M. A. Cardona, A. J. Kreiner, H. Somacal

Major Experiments

November 2010 - Gammasphere experiment – GSFMA265

"Is O(6) algebraic symmetry exhibited in real nuclee?"

June 2010 – GSI experiment U424 – **spokeperson**
"Properties of the one-phonon MSS in ^{140}Ba from an α-transfer reaction"

May 2009 - experiment at FN tandem, University of Cologne **– spokeperson**
"Search for one-phonon mixed-symmetry states in the radioactive nucleus ^{140}Nd"

January 2009 - Gammasphere experiment – GSFMA218
"Inverse-kinematics two-step Coulomb excitation of two-phonon mixed-symmetry states of ^{94}Mo and ^{96}Ru – part I"

May 2008 - Gammasphere experiment – GSFMA218
"Evolution of the one-phonon mixed-symmetry $2^+_{1,ms}$ state in the spherical–to–axially-deformed shape phase transition in Sm isotopes from inverse-kinematics Coulomb excitation"

May 2006 - Gammasphere experiment – GSFMA182
"Evolution of the one-phonon mixed-symmetry $2^+_{1,ms}$ state from U(5) to O(6) dynamical symmetry limits in Xe isotopes from inverse-kinematics Coulomb excitation"

November 2005 - Gammasphere experiment – GSFMA170
"Identification of the mixed-symmetry one-phonon $2^+_{1,ms}$ state of ^{136}Ce and ^{134}Xe in inverse-kinematics Coulomb excitation"

November 2005 - Gammasphere experiment – GSFMA169 – **spokeperson**
"Test of nuclear chirality in ^{104}Rh – study of electromagnetic transitions and the chiral selections rules via lifetime measurements using recoil distance method in inverse kinematics"

September 2005 – REX-ISOLDE (CERN) experiment
"Search for the $2^+_{1,ms}$ mixed symmetry state in ^{88}Kr"

March 2005 – GSI: RISING experiment – S285

February 2005 - Gammasphere experiment – GSFMA155
"Identification of the mixed-symmetry one-phonon $2^+_{1,ms}$ state of ^{138}Ce in inverse-kinematics Coulomb excitation"

November 2004 - Gammasphere experiment – GSFMA1013
"Superdeformation in ^{132}Ce: Elucidation of the decay-out path and extension to band termination";

May 2003 – Gammasphere experiment – GSFMA110
"Chiral exploration: ^{102}Rh";

January 2003 – EUROBALL IV experiment - EB 02/23
"Search for chiral bands in ^{104}Rh";

December 2002 – EUROBALL IV experiment - EB 02/27
"Search for hiperderomed bands in ^{126}Ba" (HDHL);

September 2002 – SUNY, Stony Brook experiment – **spokesperson**
"Search for magnetic dipole and chiral twin bands in ^{136}La and ^{134}Ba";

July 2002 – EUROBALL IV experiment - EB 01/09
"Superdeformation in $^{131,132}Ce$ – a search for band termination and discrete decay paths";

June 2002 – GANIL/EXOGAM experiment - E404S
"Probing the maximum deformation in the mass region $A \approx 130$";

May 2002 – EUROBALL IV experiment – EB 02/14 - **spokesperson**
"Search for chiral twin bands and magnetic dipole bands in the odd-odd nucleus ^{132}Cs";

April 2002 – Jyväskylä (SACRED) experiment
"Search for prolate 0^+ band head and low-lying yrare states in ^{180}Hg";

January 2002 – GASP experiment - PAC 01/50
"Spectroscopic Quadrupole Moment of the $I^{\pi} = 29/2^-$ isomer in ^{193}Pb";

June 2001 –EROBALL IV experiment – EB 00/02
"Search for magnetic dipole bands in ^{80}Br";

June 2000 – GASP experiment - PAC00/02
"Spin coupling in few particle excitations in the N=50 nucleus ^{87}Rb";

December 1999 – GASP experiment - PAC99.43
"Search for magnetic rotation in the nuclei $^{82,83,84}Rb$";

December 1999 –CYCLON experiment (Louvain-la-Neuve)
"Measurement of the quadrupole moment of the 8^+ state in the N=48 nucleus ^{84}Kr";

November 1999 –ISOL experiment (GSI, Germany)
"Study structure of nuclei close to the proton drip line";

<u>Conferences, seminars, workshops, talks etc.</u>

August 25 – 29, 2008, Cologne, Germany
XIII International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics – oral presentation

September 24 – 28, 2007, Varna, Bulgaria
XVII International Schoolon Nuclear Physics, Neutron Physics and Applications – oral presentation

June 26- July 1, 2005, New London, NH, USA
Gordon research conference on nuclear chemistry – poster presenter

June 23-25, 2005, New Heaven, USA
Yale workshop on "Nuclear Structure Physics Near the Coulomb Barrier: Into the 21st Century" – oral presentation

October 27-30, 2004, Chicago, USA
DNP meeting, 2004 - oral presentation

October 2004, Berkeley USA
Shape phase transitions – oral presentation

September 1-14, 2003, St. Andrews, UK
12^{th} UK graduated school on nuclear physics – tutor

June 15-20, 2003, New London, NH, USA
Gordon research conference on nuclear chemistry – poster presenter

June 11-14, 2003, New Heaven, USA
Yale workshop on "Nuclear Structure Physics Near the Coulomb Barrier: Into the 21st Century" – oral presentation

April 9-11, 2003, Glasgow, UK
Annual IOP meting – attendee

February 20-21, 2003, Guildford, Surrey, UK
CNRP seminar – invited talk

February 5-6, 2003, Legnaro, Italy
Gamma Spectroscopy with the Clover Array coupled to PRISMA – poster presenter

January 9-11, 2003, Guildford, Surrey, UK
Theory workshop - attendee

November 23, 2002, State University of New York, Stony Brook, USA
Nuclear structure seminar – invited talk

September 23-27, 2002, Legnaro-Padova, Italy
NS2002 - Nuclear Structure with Large Arrays – poster presenter

September 5-6, 2002, Manchester, UK
Nuclear Physics Autumn Retreat 2002 – attendee

March 18-21, 2002, Orsay, France
EUROBALL symposium and RISING project at GSI - attendee

June 5-9, 2001, Strasbourg, France
1st EUROVIV Nuclear Theory Workshop - attendee

May 5-9, 2001, Sandanski, Bulgaria
2nd Sanadski East-West coordination meeting on nuclear science - attendee

May 15-20, 2000, Debrecen, Hungary
ENS 2000 International Symposium on Exotic Nuclear Structures – oral presentation

March 20-24, 2000, Dresden, Germany
64th DPG meting – poster presenter

September 1-10, 1998, Istanbul, Turkey
First Balkan School on Nuclear Physics – oral presentation

September 1-5, 1997, Leuven, Belgium
5th Euroschool on exotic beams - attendee

September 9-13, 1995, Varna, Bulgaria
12th International school on nuclear physics and nuclear energy - attendee