

## Публикации на доц. дфзн Георги Райновски

към 14.04.2014

**A.** Реферирани публикации в списания

**B.** Доклади на конференции и публикации в годишници на лаборатории

**C.** Предложения за експерименти в големи международни лаборатории (оценявани от международни научни съвети)

A1) Physical Review C 88, 041302(R) (2014)

*Linking partial and quasi dynamical symmetries in rotational nuclei*

C. Kremer, J. Beller, A. Leviatan, N. Pietralla, **G. Rainovski**, R. Trippel, P. Van Isacker

A2) Physical Review C 88, 021302(R) (2013)

*Local suppression of collectivity in the  $N = 80$  isotones at the  $Z = 58$  subshell closure*

C. Bauer, **G. Rainovski**, N. Pietralla, D. Bianco, A. Blazhev, T. Bloch, S. Bönig, A. Damyanova, M. Danchev, K. A. Gladnishki, T. Kröll, J. Leske, N. Lo Iudice, T. Möller, K. Moschner, J. Pakarinen, P. Reiter, M. Scheck, M. Seidlitz, B. Siebeck, C. Stahl, R. Stegmann, T. Stora, Ch. Stoyanov, D. Tarpanov, M. J. Vermeulen, D. Voulot, N. Warr, F. Wenander, V. Werner, H. De Witte

A3) Physical Review C 87, 044317 (2013)

*Centrifugal stretching from lifetime measurements in the  $^{170}\text{Hf}$  ground state band*

M. K. Smith, V. Werner, J. R. Terry, N. Pietralla, P. Petkov, Z. Berant, R. J. Casperson, A. Heinz, G. Henning, R. Lüttke, J. Qian, B. Shoraka, **G. Rainovski**, E. Williams, R. Winkler

A4) Physical Review C 87, 037302 (2013)

*Identification of the proton  $2p_{1/2} \rightarrow 2p_{3/2}$  M1 spin-flip transition in  $^{87}\text{Rb}$*

C. Stahl, J. Leske, N. Pietralla, P.R. John, **G. Rainovski**, J. Gerl, I. Kojouharov, H. Schaffner

A5) Physical Review C 86, 031305(R) (2012)

*Absolute  $\beta$ -to-ground band transition strengths in  $^{154}\text{Sm}$*

T. Möller, N. Pietralla, **G. Rainovski**, T. Ahn, C. Bauer, M. P. Carpenter, L. Coquard, R. V. F. Janssens, J. Leske, C. J. Lister, E. A. McCutchan, O. Möller, D. Seweryniak, S. Zhu

A6) Physical Review C 86, 014303 (2012)

*Identification of the  $2^+_{1,\text{ms}}$  mixed-symmetry state in  $^{136}\text{Ce}$*

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

A7) Physical Review C 86, 054305 (2012)

*Triaxial deformation and nuclear shape transition in  $^{192}\text{Au}$*

Y. Oktem, D.L. Balabanski, B. Akkus, L. Amon Susam, L. Atanasova, C.W. Beausang, R.B. Cakirli, R.F. Casten, M. Danchev, M. Djongolov, E. Ganioglu, K.A. Gladnishki, J.Tm. Goon, D.J. Hartley, A.A. Hecht, R. Krucken, J.R. Novak, **G. Rainovski**, L.L. Riedinger, T. Venkova, I. Yigitoglu, N.V. Zamfir, O. Zeidan

A8) Physical Review C 85, 044303 (2012)

*High-spin structure of  $^{104}\text{Pd}$*

D. Sohler, I. Kuti, J. Timar, P. Joshi, J. Molnar, E.S. Paul, K. Starosta, R. Wadsworth, A. Algora, P. Bednarczyk, D. Curien, Zs. Dombradi, G. Duchene, D.B. Fossan, J. Gal, A. Gizon, J. Gizon, D.G. Jenkins, K. Juhasz, G. Kalinka, T. Koike, A. Krasznahorkay, B.M. Nyako, P.M. Raddon, **G. Rainovski**, J.N. Scheurer, A.J. Simons, C. Vaman, A.R. Wilkinson, L. Zolnai

A9) Nuclear Instruments & Methods in Physics Research A 668, 25 (2012)

*AGATA-Advanced GAMMA Tracking Array*

S. Akkoyun, ....., **G. Rainovski**, .....(387 co-authors)

A10) Physical Review C 84, 061306(R) (2011)

*One-phonon isovector  $2_{1,MS}^+$  state in the neutron-rich nucleus  $^{132}\text{Te}$*

M. Danchev, **G. Rainovski**, N. Pietralla, A. Gargano, A. Covello, C. Baktash, J. R. Beene, C. R. Bingham, A. Galindo-Uribarri, K. A. Gladnishki, C. J. Gross, V. Yu. Ponomarev, D. C. Radford, L. L. Riedinger, M. Scheck, A. E. Stuchbery, J. Wambach, C.-H. Yu, N. V. Zamfir

A11) Physical Review C 84, 034308 (2011)

*In-beam conversion-electron spectroscopy of  $^{180}\text{Hg}$*

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

A12) Physical Review C 83, 044318 (2011)

*O(6)-symmetry breaking in the  $\gamma$ -soft nucleus  $^{126}\text{Xe}$  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

A13) International Journal of Modern Physics E 20, 520 (2011)

*Chirality in the mass 80 region:  $^{79}\text{Kr}$*

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

A14) Physical Review C 82, 037302 (2010)

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

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

A15) Physical Review C 82, 024317 (2010)

*Evolution of the mixed-symmetry  $2+1,ms$  quadrupole-phonon excitation from spherical to  $\gamma$ -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

A16) Physics Letters B683, 11 (2010)

*How close to the  $O(6)$  symmetry is the nucleus  $^{124}\text{Xe}$ ?*

**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

A17) Physical Review C 80, 061304 (2009)

*Robust test of  $E(5)$  symmetry in  $^{128}\text{Xe}$*

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

A18) 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

A19) Physical Review C 80, 044305 (2009)

*Magnetic dipole sequences in  $^{83}\text{Rb}$*

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

A20) Physical Review C 79, 024307 (2009)

*Centrifugal stretching along the ground state band of  $^{168}\text{Hf}$*

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

A21) Physics Letters B 669, 19 (2008)

*Yrast and non-yrast  $2^+$  states of  $^{134}\text{Ce}$  and  $^{136}\text{Nd}$  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

A22) Physical Review C 78, 031302 (2008)

*Lifetime measurement of candidate chiral doublet bands in the  $^{103, 104}\text{Rh}$  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

A23) Nuclear Instruments & Methods in Physics Research A 590, 69 (2008)

*Boron foils for RDDS experiment*

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

A24) 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

A25) 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

A26) Physical Review C 76, 064302 (2007)

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

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

A27) Physical Review C 76, 044315 (2007) (Erratum Phys. Rev. C 78, 069904(2008))

*High-spin states in  $^{191,193}\text{Au}$  and  $^{192}\text{Pt}$ : 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. Gurdal, 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. Zeidan

A28) 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**

A29) Nuclear Instruments & Methods in Physics Research A 579, 472(2007)

*Polarization and relaxation of  $^{209}\text{Rn}$*

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

A30) Physical Review C 76, 024307 (2007)

*High-spin structure of  $^{105}\text{Ag}$ : 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

A31) Nuclear Physics A 788, 85 (2007)

*Isovector Quadrupole Excitations in the Valence Shell studied in Projectile Coulomb Excitation*

N. Pietralla, G. Rainovskia, T. Ahna, A. Costina

A32) Physical Review C 76, 064302 (2007)

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

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

- A33) Physical Review Letters 98, 102501 (2007)  
*Effect of  $\gamma$ -softness on the stability of chiral geometry: spectroscopy of  $^{106}\text{Ag}$*   
P. Joshi, M. P. Carpenter, D. B. Fossan, T. Koike, E. S. Paul, G. Rainovski, K. Starosta, C. Vaman, R. Wadsworth
- A34) Physical Review C 75, 014313 (2007)  
 *$\gamma$ -ray multipolarimetry between low-spin states of  $^{136}\text{Ce}$ : 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
- A35) Physical Review C 74, 067301 (2006)  
*Lifetime measurement for the  $2^+_1$  state of  $^{170}\text{Hf}$*   
A. Costin, T. Ahn, B. Bochev, K. Dusling, T. C. Li, N. Pietralla, **G. Rainovski**, W. Rother
- A36) International Journal of Modern Physics E15, 1735 (2006)  
*Evidence for  $X(5)$  critical point symmetry in  $^{128}\text{Ce}$*   
D.L.Balabanski, K.A.Gladnishki, G.Lo Bianco, A.Saltarelli, N.V.Zamfir, E.A.McCutchan, H.Ai, R.F.Casten, A.Heinz, D.A.Meyer, C.Plettner, J.Qian, V.Werner, E.Williams, B.Akkus, L.Amon, R.B.Cakirli, M.N.Erduran, Y.Oktem, S.F.Ashley, P.H.Regan, **G.Rainovski**
- A37) Physical Review C 74, 034309 (2006)  
*Quadrupole moment of the  $8^+$  yrast state in  $^{84}\text{Kr}$*   
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, K. Vyvey
- A38) Physica Scripta 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'oo, 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. Roccoz, S. Siem, P. Fallon, I.Y. Lee, A. Gørgen, 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
- A39) Physical Review C 74, 014305 (2006)  
*Competition between collective and noncollective excitation modes at high spin in  $^{124}\text{Ba}$*

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. Roccoz, 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

A40) Physical Review C 73, 054306 (2006)

*First evidence for spin-flip M1 strength in  $^{40}\text{Ar}$*

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

A41) 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

A42) The European Physical Journal A. 27, 201 (2006)

*Study of fission fragments produced by  $^{14}\text{N} + ^{235}\text{U}$  reaction*

M. Yalcinkaya, E. Ganioglu, M.N. Erduran, B. Akkus, M. Bostan, G. Gurdal, S. Erturk, D. Balabanski, **G. Rainovski**, M. Danchev, R. Dragomirova, A. Minkova, K. Vyvey, R. Beetge, R.W. Fearick, G.K. Mabala, D.G. Roux, W. Whittaker, B.R.S. Babu, J.J. Lawrie, S. Naguleswaran, R.T. Newman, C. Rigolet, J.V. Pilcher, F.D. Smith, J.F. Sharpey-Schafer

A43) Physical Review C 73, 014317 (2006)

*Medium-spin  $\gamma$ -ray spectroscopy of transitional nucleus  $^{160}\text{Er}$*

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

A44) Physica Scripta T125, 115 (2006)

*The highest spin discrete levels in  $^{131,132}\text{Ce}$*

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.Buform, A.Prevost, N.Redon, O.Stezowski, B.M.Nyako, D.Sohler,

J.Timar, L.Zolnai, D.Bazzacco, S.Lunardi, C.M.Petrache, P.Bednarczyk, D.Curien, N.Kintz, I.Ragnarsson

A45) Physical Review C 72, 064315 (2005)

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

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. Roccoz, S. Siem, F. Hannachi, J. N. Scheurer, P. Bednarczyk, 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. Görger

A46) Physical Review C 72, 054305 (2005)

*Subnanosecond lifetime measurement for the  $T=0,3$  state of odd-odd  $N = Z$   $^{58}\text{Cu}$*

A. Costin, N. Pietralla, T. Koike, C. Vaman, T. Ahn, and **G. Rainovski**

A47) Journal of Physics G 31, S1563 (2005)

*RDM lifetime measurements in  $^{107}\text{Cd}$*

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

A48) Journal of Physics G 31, S1895 (2005)

*Evidence for a new region of chirality around  $A \sim 104$*

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

A49) Journal of Physics G 31, S1741 (2005)

*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

A50) Journal of Physics G 31, S1729 (2005)

*Octupole signatures in  $^{124,125}\text{Ba}$*

P.Mason, G.Benzoni, A.Bracco, F.Camera, B.Million, O.Wieland, S.Leoni, A.K.Singh, A.Al-Khatib, H.Hubel, P.Bringel, A.Burger, A.Neusser, G.Schonwasser, G.B.Hagemann, C.R.Hansen, B.Herskind, G.Sletten, A.Algora, Zs.Dombradi, J.Gal, G.Kalinka, J.Molnar,



B.M.Nyako, D.Sohler, J.Timar, L.Zolnai, M.Kmiecik, A.Maj, J.Styczen, K.Zuber, F.Azaiez, K.Hauschild, A.Korichi, A.Lopez-Martens, J.Rocczaz, 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**, 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.Jager, N.Redon, A.Gorgen

A51) Physical Review C 72, 029801 (2005)

*Comment on "Probing nuclear structure of  $^{124}\text{Xe}$ "*

**G. Rainovski**, D. L. Balabanski, and V. I. Dimitrov

A52) Physical Review C 71, 064302 (2005)

*High-spin structure of  $^{102}\text{Ru}$*

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

A53) Physical Review 71, 054309 (2005)

*Highest spin discrete levels in  $^{131,132}\text{Ce}$ : 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. Prevost, N. Redon, O. Stezowski, B.M. Nyako, D. Sohler, J. Timar, L. Zolnai, D. Bazzacco, S. Lunardi, C.M. Petrache, P. Bednarczyk, D. Curien, N. Kintz, I. Ragnarsson

A54) The European Physical Journal A 24, 23 (2005)

*First evidence for chirality in Tc isotopes: Spectroscopy of  $^{100}\text{Tc}$*

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

A55) 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. Rocczaz, 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. Airoidi, 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

A56) Acta Physica Polonica B36, 1029 (2005)

*High-spin states in  $^{124}\text{Ba}$*

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. Airoidi, 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

A57) Physical Review C 71, 044318 (2005)

*One-phonon  $2^+_{1,ms}$  mixed –symmetry state of  $^{148}\text{Sm}$  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

A58) Physical Review C 71, 034318(2005)

*Quasi- $\gamma$  band and odd-even staggering effect in  $^{102}\text{Ru}$*

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

A59) Physics Letters B 598, 178 (2004)

*Experimental evidence for chirality in the odd-A  $^{105}\text{Rh}$*

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

A60) Physical Review C 70, 034305 (2004)

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

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

A61) Physics Letters B 595, 135 (2004)

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

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

A62) European Physics Journal A 20, 191 (2004)

*Spectroscopic quadrupole moments of high-spin isomers in  $^{193}\text{Pb}$*

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

A63) Journal of Physics G: Nucl. Part. Phys. 29, 2763 (2003)

*Planar and aplanar tilted bands in the odd-odd nucleus  $^{132}\text{Cs}$*

**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

A64) Physical Review C 68, 024318 (2003)

*Candidate chiral twin bands in the odd-odd nucleus  $^{132}\text{Cs}$ : Exploring the limits of chirality in the mass  $A \approx 130$  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

A65) Physical Review C 68, 054307 (2003)

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

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

A66) Nuclear Physics A 708, 167 (2002)

*Beta Decay of Medium and High Spin Isomers in  $^{94}\text{Ag}$*

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

A67) Journal of Physics G 28, 2617 (2002)

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

**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

A68) Physical Review C 66, 024310 (2002)

*Magnetic rotation in  $^{82}\text{Rb}$  and  $^{84}\text{Rb}$*

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

A69) Physical Review C 66, 014308 (2002)

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

**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

A70) Physical Review C 65, 044327 (2002)

*High-Spin Structure of the Spherical Nucleus  $^{90}\text{Y}$*

**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

A71) Physical Review C 63, 064315 (2001)

*Structure of High-Spin States in  $^{89}\text{Sr}$  and  $^{90}\text{Sr}$*

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

A72) Acta Physica Hungarica N.S. 12, 211 (2000)

*Tilted Three-Quasiparticle Band in  $^{123}\text{Xe}$*

**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

A73) 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  $^{123}\text{I}$ ?*

**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

A74) The European Physical Journal A 8, 303 (2000)

*Beta Decay of  $^{93}\text{Pd}$*

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

A75) Physical Review C 56, 1629 (1997)

*Band Termination in  $^{123}\text{I}$*

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

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B1) Journal of Physics: Conference Series 445, 012030 (2013)

*Exotic ideas on mixed proton-neutron symmetry and their manifestation in heavy nuclei*

N Pietralla, C Bauer, J Leske, O Möller, T Möller, P von Neumann-Cosel, **G Rainovski**, A Scheikh-Obeid, C Walz

B2) Journal of Physics: Conference Series 381, 012047 (2012)

*On the origin of low-lying M1 strength in even-even nuclei*

**G. Rainovski**, M. Danchev, N. Pietralla, A. Gargano, A. Covello, C. Baktash, J. R. Beene, C. R. Bingham, A. Galindo-Uribarri, K. A. Gladnishki, C. J. Gross, V. Yu. Ponomarev, D. C. Radford, L. L. Riedinger, M. Scheck, A. E. Stuchbery, J. Wambach, C.-H. Yu, and N. V. Zamfir

B3) EPJ Web of Conferences 38, 10003 (2012)

*Level lifetimes and quadrupole moments from Coulomb excitation in the Ba chain and the N = 80 isotones*

C. Bauer, G. Guastalla, J. Leske, O. Möller, T. Möller, J. Pakarinen, N. Pietralla, **G. Rainovski**, E. Rapisarda, D. Seweryniak, C. Stahl, R. Stegmann, J. Wiederhold, S. Zhu<sup>5</sup>

B4) EPJ Web of Conferences 38, 10001 (2012)

*Progress on the study of nuclear states with mixed proton-neutron symmetry*

N. Pietralla, Th. Möller, T. Ahn, Ch. Bauer, L. Coquard, M. Danchev, K.A. Gladnishki, A. Krugmann, J. Leske, O. Möller, P. von Neumann-Cosel, V. Yu. Ponomarev, **G. Rainovski**, A. Scheikh Obeid, M. Scheck, Ch. Walz, J. Wambach

B5) AIP Conference Proceedings. 1488, 53 (2012)

*The beauty of good data: Unveiling the traces of mixed symmetry*

N. Pietralla, T. Ahn, C. Bauer, L. Coquard, J. Leske, O. Möller, T. Möller, P. von Neumann-Cosel, **G. Rainovski**, C. Walz

B6) Journal of Physics: Conference Series 366, 012008 (2012)

*One-phonon isovector  $2^+_{1,MS}$  state in the neutron rich nucleus  $^{132}\text{Te}$*

M Danchev, **G Rainovski**, N Pietralla, A Gargano, A Covello, C Baktash, J R Beene, C R Bingham, A Galindo-Uribarri, K A Gladnishki, C J Gross, V Yu Ponomarev, D C Radford, L L Riedinger, M Scheck, A E Stuchbery, J Wambach, C -H Yu, N V Zamfir

B7) Journal of Physics: Conference Series 366, 012020 (2012)

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

K A Gladnishki, G Rainovski<sup>2</sup>, P Petkov, J Jolie, N Pietralla, A Blazhev, A Damyanova, M Danchev, A Dewald, C Fransen, M Hackstein, O Möller, T Pissulla, M Reese, W Rother

B8) ATOMKI 2010 Ann.Rept., p.40 (2011)

*Observation of  $\gamma$ -band structure in  $^{104}\text{Pd}$*

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

B9) AIP Conference Proceedings 1231, 207 (2010)

*O(6)-symmetry breaking in the  $^{126}\text{Xe}$  nucleus*

L. Coquard, N. Pietralla, T. Ahna,b, M. Carpenter, R. V. F. Janssens, K. Lister, J. Leske, O. Möller, T. Möller, **G. Rainovski**, W. Rother and S. Zhu

B10) Journal of Physics: Conference Series 205, 012039 (2010)

*Experimental studies of proton-neutron mixed symmetry states in the mass  $A \approx 130$  region*

**G. Rainovski**, N. Pietralla, J. Leske, T. Ahn, L. Coquard, C. Bauer, Th. Möller, K. Gladnishki, M. Danchev, A. Damyanova, D.Karagyozev, R. Topchiyska, C.J. Lister, R.V.F. Janssens, M.P. Carpenter, S. Zhu

B11) Proceedings of the 28<sup>th</sup> International Workshop on Nuclear Theory, 21 – 26 June, 2009, Bulgaria, Editor S. Dimitrova, page 105, (2010) (ISSN 1313-2822)

*Evolution and shell stabilization of proton-neutron mixed symmetry states in the mass  $A \approx 130$  region*

**G. Rainovski**, N. Pietralla, T. Ahn, C. Bauer, M.P. Carpenter, L. Coquard, A. Damyanova, M. Danchev, K. Gladnishki, R.V.F. Janssens, D. Karagyozev, J. Leske, C.J. Lister, Th. Möller, R. Topchiyska, S. Zhu

B12) Proc.of the 12th Internat. Conf. on Nuclear Reaction Mechanisms, Varenna, Italy, June 15-19, 2009, F.Cerutti, A.Ferrari Eds., Vol.1, p.173 (2010)

*Symmetries of Quadrupole-Collective Vibrational Motion in Transitional Even-Even  $^{124-134}\text{Xenon}$  Nuclei*

N. Pietralla, L. Coquard, **G. Rainovski**, T. Ahn, C. Bauer, J. Leske, O. Moller, T. Moller

- B13) AIP Conference Proceedings 1090, 263 (2009)(ISBN 978-0-7354-0623-0 / ISSN 0094-243X), Proceedings of the 13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Cologne, Germany, August 25-29, 2008  
*Off-yrast collectivity of the O(6) like nucleus  $^{124}\text{Xe}$*   
**G. Rainovski**, N. Pietralla, T. Ahn, L. Coquard, C.J. Lister, R.V.F. Janssens, M.P. Carpenter, S. Zhu, L. Bettermann, W. Rother, J. Jolie.
- B14) AIP Conf. Proc. 1090, 140 (2009)(ISBN 978-0-7354-0623-0 / ISSN 0094-243X), Proceedings of the 13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Cologne, Germany, August 25-29, 2008  
*Evolution of the one-phonon mixed-symmetry  $2^+_{1,ms}$  state in even-even Xe isotopes from inverse-kinematics Coulomb excitation*  
L. Coquard, T. Ahn, **G. Rainovski**, N. Pietralla, J. Leske, O. Moller, T. Moller, M. Carpenter, R.V.F. Janssens, C.J. Lister, S. Zhu, L. Bettermann, W. Rother
- B15) AIP Conf. Proc. 1090, 524 (2009)(ISBN 978-0-7354-0623-0 / ISSN 0094-243X), Proceedings of the 13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Cologne, Germany, August 25-29, 2008  
*Evidence for the Importance of Soft Deformation Potentials in Strongly Deformed Nuclei*  
N. Pietralla, A. Costin, J. Bonnet, J. Beller, A. Krugmann, O. Moller, H. Ai, R.F. Casten, A. Heinz, E.A. McCutchan, J. Qian, V. Werner, **G. Rainovski**, K. Dusling
- B16) AIP Conf. Proc. 1090, 587 (2009)(ISBN 978-0-7354-0623-0 / ISSN 0094-243X), Proceedings of the 13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Cologne, Germany, August 25-29, 2008  
*Shell Structure and Shape Changes in Neutron Rich Krypton Isotopes*  
D. Mucher, J. Iwanicki, J. Jolie, I. Stefanescu, J. Van de Walle, F. Becker, U. Bergmann, A. Blazhev, E. Bouchez, P. Butler, J. Cederkall, T. Czosnyka, T. Davinson, J. Eberth, T. Faestermann, S. Franchoo, C. Fransen, J. Gerl, R. Gernhauser, D. Habs, R.-D. Herzberg, M. Huyse, D. Jenkins, G. Jones, O. Kester, W. Korten, J. Kownacki, T. Kroll, R. Krucken, Z. Liu, S. Mandal, P. Napiorkowski, T. Nilsson, N. Pietralla, **G. Rainovski**, H. Scheit, A. Scherillo, D. Schwalm, T. Sieber, Ch. Theisen, P. Van Duppen, N. Warr, D. Weisshaar, F. Wenander, B. Wolf, P. Woods, M. Zielinska
- B17) AIP Conference Proceedings 1165, 225 (2009), Proc. Intern. Conf. on Nuclear Structure and Dynamics, Dubrovnik, Croatia, 4-8 May, 2009  
*Isvector Quadrupole Excitations in the Valence Shell of Vibrational Nuclei*  
N. Pietralla, T. Ahn, M. Carpenter, L. Coquard, R.V.F. Janssens, K. Heyde, K. Lister, J. Leske, **G. Rainovski**, S. Zhu

B18) Proceedings of the International Conference Nuclear Structure and Related Topics, June 30 - July 4, 2009 Dubna, Russia, Editors A.I. Vdovin, V.V. Voronov, R.V. Jolos, vol. II, page 90 (2009) (ISBN 978-5-9530-0235-6)

*Evolution and shell stabilization of proton-neutron mixed symmetry states in the mass  $A \approx 130$  region*

G. Rainovski, N. Pietralla, J. Leske, T. Ahn, L. Coquard, C. Bauer, Th. Möller, C.J. Lister, R.V.F. Janssens, M.P. Carpenter, S. Zhu

B19) Proceedings of the 9th Internat. Spring Seminar on Nuclear Physics: Changing Facets of Nuclear Structure, Vico Equense, Italy, May 20-24 2007, A.Covello, Ed., World Scientific, Singapore, p.325 (2008)

*Isovector valence shell excitations in vibrational nuclei*

N. Pietralla, T. Ahn, O. Burda, **G. Rainovski**

B20) Acta Physica Polonica B38, 1385 (2007)

*Lifetime Determination of Excited States in  $^{106}\text{Cd}$*

S.F.Ashley, A.Linnemann, J.Jolie, P.H.Regan, K.Andgren, A.Dewald, E.A.McCutchan, B.Melon, O.Moller, N.V.Zamfir, L.Amon, N.Boelaert, R.B.Cakirli, R.F.Casten, R.M.Clark, C.Fransen, W.Gelletly, G.Gurdal, M.Heidemann, K.L.Keyes, M.N.-Erduran, D.A.Meyer, A.Papenberg, C.Plettner, **G.Rainovski**, R.V.Ribas, N.J.Thomas, J.Vinson, D.D.Warner, V.Werner, E.Williams, K.O.Zell

B21) Acta Physica Polonica B38, 1421 (2007)

*Light charged particles as gateway to hyperdeformation*

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'oo, 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. Roccoz, S. Siem, P. Fallon, I.Y. Lee, A. Görge, 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

B22) Atomki 2007 Ann.Rept., p.26 (2007)

*Study of the band structures in  $^{104}\text{Pd}$*

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



B23) AIP Conference Proceedings 819, 11 (2006), Proc. 12th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics Location: Univ Notre Dame, Notre Dame, IN Date: SEP 04-09, 2005

*In-beam gamma-spectroscopy of low-spin mixed-symmetry states of Ce-138 with gammasphere in singles-mode*

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

B24) AIP Conference Proceedings 802, 206 (2005), Proc. International Symposium on Exotic Nuclear Systems Location: Debrecen, HUNGARY Date: JUN 20-25, 2005

*Composite chiral bands in the A similar to 105 mass region*

J. Timar, C. Vaman, K. Starosta, R. Joshi, V.I. Dimitrov D.B. Fossan, T. Koike, D. Sohler, J. Molnar, R. Wadsworth, A. Algora, P. Bednarczyk, D. Curien, Z. Dombradi, G. Duchene, A. Gizon, J. Gizon, D.G. Jenkins, A. Krasznahorkay, I.Y. Lee, A.O. Macchiavelli, E.S. Paul, P.M. Raddon, **G. Rainovski**, J.N. Scheurer, A.J. Simons, A.R. Wilkinson, L. Zolnai, S. Frauendorf

B25) Triangle University Nuclear Laboratory, Annual Report, p.186 (2005)

*Search for Magnetic Dipole Excitation Strength in  $^{40}\text{Ar}$*

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

B26) AIP Conference Proceedings 701, 303 (2004) International Conference on the Labyrinth in Nuclear Structure Location: Iraklion, GREECE Date: JUL 13-19, 2003

*Hyperdeformed shapes and Jacobi transitions in Ba-126*

B. Herskind, G. B. Hagemann, G. Sletten, Th. Dossing, C. Ronn Hansen, S. Odegård, 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, I. Piqueras, J. Robin, J. Dudek, N. Rowley, N. Redon, F. Hannachi, J. N. Scheurer, J. N. Wilson, A. Lopez-Martens, A. Korichi, K. Hauschild, J. Roccoz, S. Siem, P. Fallon, I.-Y. Lee, A. Goergen, B. M. Nyakó, A. Algora, Zs. Dombrádi, J. Gál, G. Kalinka, D. Sohler, J. Molnár, J. Timár, L. Zolnai, K. Juhász, 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 and D. Petrache

B27) AIP Conference Proceedings 701, 383 (2004) International Conference on the Labyrinth in Nuclear Structure Location: Iraklion, GREECE Date: JUL 13-19, 2003

*Chirality in the A ~100 region*

P. Joshi, D. G. Jenkins, P. M. Raddon, A. J. Simons, R. Wadsworth, T. Wilkinson, D. B. Fossan, 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, N. Fotiades and J. N. Scheurer

B28) AIP Conference Proceedings 701, 208 (2004) International Conference on the Labyrinth in Nuclear Structure Location: Iraklion, GREECE Date: JUL 13-19, 2003

*Deformation of the very neutron-deficient rare-earth nuclei produced with the SPIRAL 76Kr radioactive beam and studied with EXOGAM + DIAMANT*

N. Redon, A. Prévost, D. Guinet, Ph. Loutesse, M. Meyer, B. Rossé, O. Stézowski, P. J. Nolan, C. Andreoiu, A. J. Boston, M. Descovich, A. O. Evans, S. Gros, J. Norman, R. D. Page, E. S. Paul, **G. Rainovski**, J. Sampson, G. de France, J. M. Casandjian, Ch. Theisen, J. N. Scheurer, B. M. Nyakó, J. Gál, G. Kalinka, J. Molnár, Zs. Dombrádi, J. Timár, L. Zolnai, K. Juhász, A. Astier, I. Deloncle, M. G. Porquet, R. Wadsworth, P. Raddon, Y. Lee, A. Wilkinson, P. Joshi, J. Simpson, D. Appelbe, D. Joss, R. Lemmon, J. Smith, D. Cullen, A. Brondi, G. La Rana, R. Moro, E. Vardacci and M. Girod

B29) ATOMKI 2003 Ann.Rept., p.9 (2004)

*Chiral twin bands in the  $^{105, 106}\text{Rh}$  nuclei*

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

B30) GSI Annual Report 2002, p. 6

*High-Spin  $\beta$  Decay of  $^{94}\text{Ag}$*

C. Plettner, 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. Ostrowski, **G. Rainovski**, E. Roeckl

B31) International Symposium on Nuclear Structure Physics (NP 2001), University of Göttingen Germany, MAR 05-08, 2001

*Transition strengths in magnetic dipole bands in  $^{82}\text{Rb}$ ,  $^{83}\text{Rb}$  and  $^{84}\text{Rb}$*

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

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C1) CERN – HIE-ISOLDE proposal INTC-P-339 (experiment IS546) (2012)

*“Study of the effect of shell stabilization of the collective isovector valence-shell excitations along the  $N=80$  isotonic chain”*

C. Bauer, N. Pietralla (spokeperson), S. Bönig, S. Illeva, Th. Kröll, O. Möller, T. Möller, M. Scheck, C. Stahl, R. Stegmann, M. Thürauf, **G. Rainovski (co-spokesperson)**, M. Danchev, K. Gladnishki, V. Karayonchev, A. Blazhev, H. Duckwitz, C. Fransen, J. Jolie, N. Warr, D. Mücher

42 shifts approved as the experiment is expected to run in 2015

C2) GSI experiment S426 (approved by G-PAC February 2012, completed March 2014)

*Relativistic Coulomb M1 excitation of neutron-rich  $^{85}\text{Br}$*

N. Pietralla (spokesperson), **G. Rainovski (co-spokesperson)**, M. Reese, C. Stahl, P. Boutachkov, M. Danchev, J. Gerl, K. Gladnishki, M. Gorska, G. Guastella, P. R. John, J. Leske, E. Merchan, O. Möller, T. Möller, S. Pietri, H.-J. Wollersheim, D. Jenkins

C3) Argonne National Laboratory – ATLAS proposal #1352 (approved 2011, amended 2012, completed 2013)

*Study of the origin of the low-lying M1 strength: search for the one-phonon mixed-symmetry  $2^+_{1,ms}$  state of  $^{204}\text{Hg}$  in an inverse-kinematics Coulomb excitation experiment*

**G. Rainovski (spokesperson)**, N. Pietralla, M. Scheck, T. Möller, O. Möller, R.V.F. Janssens, C.J. Lister, M. Carpenter, and S. Zhu

C4) CERN – ISOLDE proposal INTC-P-268 (experiment IS546) (approved 2009, completed 2012)

*Study of the effect of shell stabilization of the collective isovector valence-shell excitations along the  $N=80$  isotonic chain*

N. Pietralla (spokesperson), J. Leske, L. Coquard, O. Möller, T. Möller, Th. Kröll, **G. Rainovski (co-spokesperson)**, M. Danchev, K. Gladnishki, D. Karagyozov, R. Topchiyska, A. Damyanova, J. Jolie, A. Blazhev, D. Mücher, C. Fransen, N. Warr, D. Jenkins, R. Wadsworth, C. Barton, and R. Krücken

C5) GSI experiment U242 (approved by G-PAC 2009, completed 2010)

*Properties of the one-phonon MSS in  $^{140}\text{Ba}$  from an  $\alpha$ -transfer reaction*

**G. Rainovski (spokesperson)**, J. Leske (co-spokesperson), C. Bauer, L. Coquard, A. Damyanova, M. Danchev, K. Gladnishki, I. Kojouharov, Th. Kröll, N. Pietralla, S. Pietri, H. Schaffner

C6) Argonne National Laboratory – ATLAS proposal #1309 (approved 2010, completed 2010)

*Is  $O(6)$  algebraic symmetry exhibited in real nuclei?*

C.J. Lister (spokesperson), E.A. McCutchan, M.P. Carpenter, R.V.F. Janssens, T.L. Khoo, T. Lauritsen, D. Seweryniak, S. Zhu, G. Gurdal, **G. Rainovski (co-spokesperson)**, N. Pietralla, L. Coquard, J. Leske, O. Moller, Th. Moller, J. Jolie, W. Rother, L. Betterman, V. Werner, T. Ahn, I. Y Lee, A.O. Macchiavelli, M. Cromaz, R. Clark, P. Fallon

C7) Argonne National Laboratory – ATLAS proposal #1237 (approved 2008, completed 2009)

*Inverse-kinematics two-step Coulomb excitation of two-phonon mixed-symmetry states of  $^{94}\text{Mo}$  and  $^{96}\text{Ru}$  – part I*

N. Pietralla (spokeperson), C. Bauer, L. Coquard, J. Leske, **G. Rainovski (co-spokeperson)**, M. Carpenter, R.V.F. Janssens, T. Lauritsen, K. Lister, E.A. McCutchan, S. Zhu, R.C. Vondrasek

C8) Argonne National Laboratory – ATLAS proposal #1163-2 (approved 2007, completed 2008)

*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*

T. Ahn (spokesperson), M. Carpenter, L. Coquard, A. Costin, R.V.F. Janssens, T. Lauritsen, J. Leske, K. Lister, O. Möller, T. Möller, N. Pietralla, **G. Rainovski (co-spokesperson)**, R.C. Vondrasek, S. Zhu

C9) Argonne National Laboratory – ATLAS proposal #1085 (approved 2005, completed 2005)

*Identification of the mixed-symmetry one-phonon  $2^+_{1,ms}$  state of  $^{136}\text{Ce}$  and  $^{134}\text{Xe}$  in inverse-kinematics Coulomb excitation*

T. Ahn (spokesperson), N. Pietralla, G. Rainovski (co-spokesperson), M. Carpenter, R.V.F. Janssens, T. Lauritsen, K. Lister, S. Zhu, R.C. Vondrasek

C10) Argonne National Laboratory – ATLAS proposal #1096 (approved 2005, completed 2005)

*Test of nuclear chirality in  $^{104}\text{Rh}$  - study of electromagnetic transitions and the chiral selection rules via lifetime measurements using the recoil distance method in inverse kinematics*

**G. Rainovski** (spokesperson), N. Pietralla (co-spokesperson), A. Costin, T. Koike, C. Vaman, P. Joshi, R. Wadsworth, P. Davies, F. Johnston-Theasby, J. Timár, E.S. Paul, M. Danchev, M. Djongolov, D.L. Balabanski, K. Gladnishki, A. Dewald, O. Möller, Barbara Melon, R.V.F. Janssens, M. Carpenter, C. Lister, and S. Zhu

C11) VIVITRON experiment EB-02114 (approved 2002, completed 2002)

*'Search for Magnetic Dipole Bands and Chiral Twin Bands in  $^{132}\text{Cs}$*

**G.I. Rainovski (spokesperson)**, P.J. Nolan, E.S. Paul (co-spokesperson), D.G. Jenkins, A.O. Evans, J. Norman, R. Wadsworth, A. Simons, P. Raddon, D.B. Fossan, T. Koike, K. Starosta, C. Vaman, E. Farnea, G. de Angelis, A. Gadea