

Curriculum Vitae

Prof. Stefan Gottfried Frauendorf
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Born: 3rd February 1945 in Werdau, Sachsen, Germany

Citizenship: German

Married, 2 children

Education

1963-1968 Study of physics at the Technical University Dresden, Sachsen, Germany
 Masters Degree

1971 Academic Degree Dr. rer. nat. (corresponding to PhD) at the Technical University
 Dresden

1982 Academic Degree Dr. sc. nat. at the Technical University Dresden

1991 Academic degree Dr. rer. nat. habil. at the Technical University Dresden (German
 prerequisite for a professorship)

Positions Held

1968-present Research Scientist at Institute for Nuclear and Hadronic Physics, Research Center
 Rossendorf Inc., Dresden Germany

1971-1974 Postdoc at the Joint Institute for Nuclear Research Dubna, USSR

1976-1984 Regular research visits to the Niels Bohr Institute Copenhagen, Denmark

1981-1982 Visiting Professor at the University of Tennessee, Knoxville, USA

1990-1991 Research visit at the Niels Bohr Institute Copenhagen

1999-present Professor of Physics at the University of Notre Dame

Honors

Fellow of American Physical Society, 2003

Other Professional Experience

Reviewer of Research Grants for Department of Energy and National Science Foundation

Referee for Phys. Rev. C, Nucl. Phys. A, Phys. Lett. B, and Phys. Rev. Lett.

National award of East Germany for scientific achievements, 1983

Conferences Organized

Midwest Nuclear Theory Get Together 2006

Fall Meeting of the American Physical Society, Division of Nuclear Physics, Minisymposium on Nuclei as Mesoscopic Systems

University Service

Committee for Graduate Student Qualifier

Committee for Graduate Curriculum

Committee on Appointments and Promotions

List of Publications

1. "Rotational Motion and Non-Adiabaticity in the Ground State," S. Frauendorf, D. Janssen, and L. Münchow, Nuclear Physics **A125**, 369 (1969).
2. "Projection Description of Rotational and Quasirotonal Bands in Even-Even Nuclei," S. Frauendorf, D. Janssen, L. Münchow, Jadernaja Fisika (Soviet Nuclear Physics)**12**, 939 (1970).
3. "Spectra of Vibrational Nuclei and Angular Momentum Projection," S. Frauendorf, D. Janssen, and L. Münchow, Jadernaja Fisika (Soviet Nuclear Physics) **12**, 1183 (1970).
4. "Description of Collective Motion with the Projection Method," S. Frauendorf, D. Janssen, and L. Münchow, Jadernaja Fisika (Soviet Nuclear Physics) **13**, 60 (1971).
5. "Application of the Projection Method for Rotation," S. Frauendorf, Dissertation A, Technical University Dresden (1971).
6. "Intraband BE2-Ratios by Angular Projected K=0 States," S. Frauendorf, D. Janssen, and L. Münchow, Physics Letters **34B**, 469 (1971).
7. "Boson Description of Collective States," D. Janssen, F. Dönau, S. Frauendorf, and R.V. Jolos, Nuclear Physics **A172**, 145 (1971).
8. "Phase transition in High Spin States," S. Frauendorf, Publication JINR Dubna **P4-6990** (1973).
9. "The influence of 1 QP-State Equilibrium Deformations on E1-Transition Probabilities," W. Andrejtscheff, F.R. May, L. Münchow, and S. Frauendorf, Physics Letters **44B**, 351 (1973).
10. "Bandmixing with K=1," F.R. May, L. Münchow, and S. Frauendorf, Izvestia Akademia Nauk USSR **XXXVII**, 1860 (1973).
11. "Die Schalenkorrekturmethode und ihre Anwendungen," S. Frauendorf, Lektionen auf der Winterschule der Kernphysiker der DDR, Falkenberg 1973, Publication **ZfK - 274** (1973).
12. "Phenomenological Description of Rotational Spectra in Odd Nuclei by the Angular Momentum Projection Method," F.R. May, L. Münchow, and S. Frauendorf, Jadernaja Fisika (Soviet Nuclear Physics) **20**, 873 (1974).
13. "The Effect of the Shell Structure on the Moment of Inertia, the Behaviour of the Averaged Moment of Inertia," V.V. Pashkevich and S. Frauendorf, Jadernaja Fisika (Soviet Nuclear Physics) **20**, 1122 (1974).
14. "On the Oblate-Prolate Transition in the Ground State Rotational Band of Light Mercury Isotopes," S. Frauendorf and V.V. Pashkevich, Physics Letters **55B**, 365 (1975).

15. "Coexistence of Different Nuclear Shapes in the Isotopes of the Lead Region," S. Frauendorf, *Proceedings of the V International Symposium on the Interactions of Fast Neutrons with Nuclei*, Gaussig (GDR) 1975, Publication **AfK - 324** (1975).
16. "Shell energies of rapidly rotating nuclei," K. Neergard, V.V. Pashkevich, and S. Frauendorf, *Nuclear Physics* **A262**, 61 (1976).
17. "A Systematic Investigation of the Corioles Antipairing Effect in the Rare Earth Region Including Projection on the Exact Particle Number and Angular Momentum," S. Frauendorf, *Nuclear Physics* **A263**, 150 (1976).
18. "Changes in the Nuclear Collective Parameters Caused by Rotation," I.N. Mikhailov and S. Frauendorf, *Proceedings of the International Conference on Selected Topics in Nuclear Structur, Vol. II*, Dubna 1976. Invited Lectures.
19. "A Prediction of the Shape Transitions in Very Neutron-Deficient Even-mass Isotopes in the Lead Region," F.R. May, V.V. Pashkevich, and S. Frauendorf, *Physics Letters* **68B**, 113 (1977).
20. "The Instability of Rapidly Rotating Nuclei towards Emission of Nucleons," T. Døssing, S. Frauendorf, and H. Schulz, *Nuclear Physics* **A287**, 137 (1977).
21. "Description of Odd Transitional Nuclei in Terms of Core-Quasiparticle Models," F. Dönau and S. Frauendorf, *Physics Letters* **71B**, 263 (1977).
22. "Influence of Rotation on the Collective Properties of Nuclei," I.N. Michailov, K. Neergard, V.V. Pashkevich, and S. Frauendorf, *Fisika Elementarnich Chastic i Atomnije Jader* **8**, 1388 (1977).
23. "A Core-quasiparticle-Coupling Model for Odd-A Transitional Nuclei," F. Dönau and S. Frauendorf, *Journal Physical Society of Japan* **44**, 526 (1978).
24. "Quasiparticle Orbitals and M1-Transitions," F. Dönau and S. Frauendorf, *Nucleonica* **24**, 479 (1979).
25. "An Interpretation of Backbending in Terms of the Crossing of the Ground State Band with an Aligned Two-Quasiparticle Band," R. Bengtsson and S. Frauendorf, *Nuclear Physics* **A314**, 27 (1979).
26. "Quasiparticle Spectra above the Yrastline," R. Bengtsson and S. Frauendorf, *Nuclear Physics* **A327**, 139 (1979).
27. "Spectroscopic Trends of Very Neutron-Deficient Nuclei in the Lead Region," S. Frauendorf, F.R. May, and V.V. Pashkevich, *Proceedings of International Conference on Future Directions in Studies of Nuclei far from Stability*, Nashville 1979. Invited Talks.
28. "Frequency and Alignment Classification of Multiple Band Crossings," L.L. Riedinger, O. Andersen, S. Frauendorf, J.D. Garret, J.J. Gaardehoje, G.B. Hagemann, B. Herskins, Y.V. Makovetzky, J.D. Waddington, M. Guttormsen, and P.O. Tjom, *Physical Review Letters* **44**, 568 (1980).

29. "Rotational Band Crossing in the Actinides," R.S. Simon, F. Folkmann, Ch. Briancon, J. Libert, J.P. Thibaud, R.J. Walen, and S. Frauendorf, *Zeitschrift für Physik* **298**, 121 (1980).
30. "Quasiparticle Motion in Rotating Nuclei," S. Frauendorf, *Proceedings of the International Conference on Extreme States in Nuclear Systems*, Dresden 1980, p. 204. Invited Talks.
31. "Spin Alignment in Heavy Nuclei," S. Frauendorf, *Physica Scripta* **24**, 349 (1981).
32. "Quasiparticle Motion in Rotating Nuclei," S. Frauendorf, *Proceedings of the International Workshop on Nuclear Physics*, Philadelphia, 1980. Invited Lectures.
33. "Magnetic Moments in the Backbending Region," S. Frauendorf, *Physics Letters* **100B**, 219 (1981).
34. "Evidence for Deformed Ground States in Light Kr- Isotopes Nuclear Collective Dynamics," R.B. Piercey, J.H. Hamilton, R. Soundraranaga, A.V. Ramaya, C.F. Maguire, R.L. Robinson, H.J. Kim, S. Frauendorf, J. Döring, L. Funke, G. Winter, J. Roth, L. Cleeman, J. Eberth, W. Neumann, J.C. Wells, J. Lin, A.C. Rester and H.J. Carter, *Physical Review Letters* **47**, 1514 (1981).
35. "Boson Description of Collective States," F. Dönau and S. Frauendorf, *Nuclear Physics Special Issue, Proceedings of the Nuclear Physics Workshop*, ICTP, Trieste, 1981.
36. "The Cranked Shell Model," S. Frauendorf, *Nuclear Physics Special Issue, Proceedings of the Nuclear Physics Workshop*, ICPT, Trieste, 1981.
37. "Systematics of the $1/2^+[660]$ Quasineutron Configuration in $^{176-186}\text{Os}$ as Determined from Band-Crossing Frequencies," J.D. Garrett and S. Frauendorf, *Physics Letters* **108B**, 77 (1982).
38. "On the Interaction of the S-Band with the Ground State and Gamma Band in Nuclei around Mass 80," L. Funke, J. Döring, S. Frauendorf, P. Kemnitz, F.R. May, E. Will, and G. Winter, *Physics Letters* **108B**, 243 (1982).
39. *Proceedings of the Nuclear Physics School*, F. Dönau and S. Frauendorf, Poiana Brasov, Romania, 1982. Invited Lectures.
40. "Nuclear Structure at High Spin," S. Frauendorf, Dissertation B, Technical University Dresden, 1982.
41. "Magnetic Moments as a Probe for Rotational Alignment," Y.S. Chen and S. Frauendorf, *Nuclear Physics* **A393**, 135 (1983).
42. "Triaxial Shapes of Rotating Nuclei with Neutron Numbers 88, 89, 90," S. Frauendorf and F.R. May, *Physics Letters* **125B**, 245 (1983).
43. "Interplay between Single Particle and Collective Degrees of Freedom in Rapidly Rotating Nuclei," S. Frauendorf, *Nuclear Physics* **A409**, 243c (1983).

44. "Aligned $\nu_{13/2}$ Band Coupled to Different Shapes in ^{186}Hg ," R.V. Janssens, P. Chowdhury, H. Ehmling, D. Frakers, T.L. Khoo, W. Kühn, Y.H. Chung, P.J. Daly, Z.W. Grabowski, W. Kortelathi, S. Frauendorf and J.Y. Chang, *Physics Letters* **131B**, 35 (1982).
45. "Shape of Rotating Quasiparticle Orbits and Signatures Splitting in La, Ce, and Pr Nuclei," Y.S. Chen, S. Frauendorf, and G. Leander, *Physical Review* **C28**, 2437 (1983).
46. "Magnetic Moments as a Probe for Rotational Alignment," F. Dönau and S. Frauendorf, *Proceedings of the Conference on High Angular Momentum Properties of Nuclei*, Oak Ridge, Tennessee USA 1982, ed. N.R. Johnson in Nuclear Science Research Conferences Series V. **4**, Harwood, NY (1983).
47. "Shape Effects in $h_{9/2}$ and $g_{7/2}$ Bands," A.J. Larabee, L.H. Courtney, S. Frauendorf, L.L. Riedinger, J.D. Waddington, M.P. Fewell, N.R. Johnson, I.Y. Lee, and F.K. McGowan, *Physical Review* **C29**, 1943 (1984).
48. "Effects of Reinforcing Shell Gaps on the Competition between Spherical and Highly Deformed Shapes," J. Hamilton, A.V. Ramayya, C.F. Maguire, R.B. Piercey, R. Bengtsson, P. Möller, J.R. Nix, J.Y. Zhang, R.L. Robinson, and S. Frauendorf, *Journal of Physics* **G10**, L87 (1984).
49. "Quasiparticles in Pearshaped Rotating Nuclei," S. Frauendorf and V.V. Pashkevich, *Physics Letters* **141B**, 23 (1984).
50. "Triaxial Shapes - Induced and Detected by Rotating Quasiparticles," S. Frauendorf, *Proceedings of the International Symposium on In Beam Spectroscopy*, Debrecen 1984, Publishing House of the Hungarian Academy of Science, Separatum, p. 711.
51. "Triaxial Shapes - Induced and Detected by Rotating Quasiparticles," S. Frauendorf, *Proceedings of the Fifth Nordic Meeting on Nuclear Physics*, Jyväskylä, 1984, p. 19.
52. "Experimental Estimates of Quasiparticle Interactions," S. Frauendorf, L.L. Riedinger, J.D. Garrett, J.J. Gaardhoje, G.B. Hagemann, and B. Herskins, *Nuclear Physics* **A431**, 511 (1984).
53. "The Time Reversal Response Function," R.A. Broglia, M. Diebel, F. Barranco, and S. Frauendorf, *Proceedings of the XXIII International Wintermeeting on Nuclear Physics*, Bormio 1985, Istituto di Fisica dell'Universita e Istituto Nazionale di Fisica Nucleare Milano.
54. "Triaxiality in Nuclei around $A=105$," H.J. Keller, S. Frauendorf, U. Hagemann, L. Käubler, H. Prade, and F. Stary, *Nuclear Physics* **A444**, 261 (1985).
55. "Role of the Ground State Correlations Induced by Pairing Vibrations in Strongly Rotating Nuclei," R.A. Broglia, M. Diebel, and S. Frauendorf, *Physics Letters* **166B**, 252 (1986).
56. "The Routhian in 'Gauge Space'," Jing-ye Zhang, J.D. Garrett, J.C. Bacelar, and S. Frauendorf, *Nuclear Physics* **A543**, 104 (1986).

57. "Quasiparticle Levels in Rotating Rare Earth Nuclei - A Cranked Shell Model Dictionary," R. Bengtsson, S. Frauendorf, and F.R. May, *Atomic Data and Nuclear Data Tables* **35**, 15 (1986).
58. "Semiclassical Description of Pairing Force Matrix Elements at Finite Rotational Frequencies," E. Vigezzi, D.R. Bes, R.A. Broglia, and S. Frauendorf, *Physical Review* **C38**, 1448 (1988).
59. "Cranking about a Tilted Axis," S. Frauendorf, *Proceedings of the International Symposium on Future Directions in Nuclear Physics with 4 π Gamma Detection Systems of the New Generation*, Strasbourg 1991, Invited Lectures, AIP Conference Proceedings 259, 1992. p. 223.
60. "Interaction Strength and Shape Difference for $h_{9/2}$ and $h_{11/2}$ configurations in ^{163}Tm ," H.J. Jensen, G.B. Hagemann, P.O. Tjøm, S. Frauendorf, A. Atac, M. Bergström, A. Bracco, A. Brockstedt, H. Carlsson, P. Eckström, J.M. Espino, B. Herskind, F. Ingbretsen, J. Jongman, S. Leoni, R.M. Lieder, T. Lönnroth, A. Maj, B. Million, A. Nordlund, J. Nyerg, M. Piiparinen, H. Ryde, M. Sugawara, and A. Virtanen, *Zeitschrift für Physik A* **340**, 351 (1991).
61. "Quenched Proton Neutron Coupling in $h_{11/2}$ High Spin States of ^{128}Ba ," S. Frauendorf, W. Lieberz, D. Lieberz, P. von Brentano, A. Gelberg, *Physics Letters* **B 247**, 149 (1992).
62. "Tilted Cranking Classification of Multiband Spectra," S. Frauendorf and F.R. May, *Proceedings of the International Conference on Nuclear Structure at High Angular Momentum*, Ottawa, Canada, 1992, invited lectures, AECL-10613, Volume II, p. 177.
63. "Tilted Cranking," S. Frauendorf, *Nuclear Physics A* **557**, 259c (1993).
64. "Chaotic Behaviour in Warm Deformed Nuclei Induced by Residual Two-body Interactions," M. Matsuo, T. Døssing, B. Herskind, S. Frauendorf, E. Vigezzi, R.A. Broglia, *Nuclear Physics A* **557**, 211c (1993).
65. "Interpretation of Bands in ^{163}Er within the Tilted Rotation Scheme," A. Brokstedt, J. Lytkens-Lindén, M. Bergström, L.P. Eckström, H. Ryde, J.C. Barcelar, S. Frauendorf, J.D. Garrett, G.B. Hagemann, B. Herskind, F.R. May and P.o. Tjøm, *Nuclear Physics* **A557**, 469c (1993).
66. "Rotation-Induced Transition from Superfluid to Normal Phase in Mesoscopic Systems: ^{168}Yb and Adjacent Nuclei," J.R.B. Oliviera, S. Frauendorf, M.A. Deleplanque, R.M. Diamond, F.S. Stephens, C.W. Beausang, J.E. Draper, C. Duyar, E. Rubel, J.A. Becker, E.A. Henry, N. Roy, *Physical Review* **C 47**, R926 (1993).
67. "Rotational Population Patterns in Heavy-ion Two Particle Transfer Reactions between Even-even Thorium Nuclei," S.Y. Chu, R. Donangelo, S. Frauendorf, J.O. Rasmussen, Y. Shimizu and M.A. Stoyer, *Proceedings of the Symposium on Nuclear Physics of our Times*, Sanibel Island, Florida, USA, 1992.
68. "On Cranking about Non-symmetry Axes," F. Dönau and S. Frauendorf, *Proceedings of the Symposium on Nuclear Physics of our Times*, Sanibel Island, Florida, USA, 1992.

69. "First Observation of a Crossing of Oblate Dipole Bands in the A=200 Region," G. Baldsiefen, U. Birkental, H. Hübel, N. Nenoff, B.V. Thirumala Rao, P. Willsau, J. Heese, H. Kluge, K.H. Maier, R. Schubart, and S. Frauendorf, *Physics Letters* **B 298**, 54 (1993).
70. "Poisson and Porter-Thomas Fluctuations in Off-Yrast Rotational Transitions," M. Matsuo, T. Døssing, B. Herskins, and S. Frauendorf, *Nuclear Physics* **A564**, 345 (1993).
71. "Shapes of Na Clusters," S.Frauendorf and V.V. Pashkevich, *Zeitschrift für Physik* **D 26**, S98 (1993).
72. "Interpretation of Bands in ^{163}Er Within the Tilted Rotation Scheme," A. Brokstedt, J. Lytkens-Lindén, M. Bergström, L.P. Eckström, H. Ryde, J.C. Barcelar, J.D. Garrett, G.B. Hagemann, B.Herskind, F.R. May, P.O. Tjøm, and S. Frauendorf, *Nuclear Physics* **A571**, 337 (1994).
73. "The Decline of K-Forbiddenness," S. Frauendorf, *Proceedings of the International Conference on the Future of Nuclear Spectroscopy*, Crete, June 27-July 3, 1993, Invited Lectures, Ed. W. Gelletly, C.A. Kalfas, R. Vlastou, S. Harissopoulos, and D. Loukas, I.N.P., National Center for Scientific Research Demokritos, Athens, Greece, 1994.
74. "'Shear Bands' in ^{199}Pb and ^{200}Pb ," G. Baldsiefen, H. Hübel, W. Korten, D. Mehta, N. Nenoff, B.V. Thirumala Rao, P. Willsau, H. Grawe, J. Heese, H. Kluge, K.H. Maier, R. Schubart, S. Frauendorf, and H.J. Maier, *Nuclear Physics* **A 574**, 521 (1994).
75. "Consequences of neutron-proton interaction on backbending," S. Frauendorf, J.A. Sheikh, and N. Rowley, *Physical Review* **C 50**, 196 (1994).
76. "High-K-Bands in the ^{168}Yb Region," J.B. Oliviera, S. Frauendorf, J. Burde, B. Cederwall, M.A. Deleplanque, R.M. Diamond, A.O. Machiavelli, F.S. Stephens, J.E. Draper, C. Duyar, E. Rubel, J.A. Becker, E.A. Henry, M.J. Brinkman, A. Kuhnert, M.A. Stoyer, T.F. Wang, and J.A. Cizewsky, *Physical Review* **C 50**, 1360 (1994).
77. "Tilted cranking," S. Frauendorf, J. Meng, and J. Reif, *Proc. Conf. on Physics from large γ -Ray Detector Arrays*, Berkeley 1994, LBL - 35687, Conf - 94088, UC - 413, p. 54.
78. "Tilted four-quasiparticle bands in even-even Xe and Ba nuclei," F. Dönau, S. Frauendorf, O. Vogel, A. Gelbert, and P. von Brentano, *Nuclear Physics* **A 584**, 241 (1995).
79. "'Shear Bands' in Pb Nuclei - a New Nuclear Structure Effect," W. Korten, G. Baldsiefen, M. Neffgen, H. Hübel, S. Chmel, W. Pohler, U.J. van Severen, P. Willsau, S. Frauendorf, J. Meng, H. Grawe, J. Heese, H. Kluge, K.H. Maier, R. Schubart, and K. Spohr, *Physics Scripta* **T56**, 44 (1995).
80. "Study of High-Spin States in $^{181,182}\text{Os}$," T. Kutawarova, R.M. Lieder, H. Schnare, G. Hebbinghaus, D. Balabanski, M.A. Bently, P. Fallon, D. Howe, A.R. Mokhtar, J.F. Sharpey-Schafer, P. chowdhury, B. Fabricius, G. Sletten, P. Walker, and S. Frauendorf, *Nuclear Physics* **A 587**, 111 (1995).
81. "Triaxial Shapes of Sodium Clusters," S.M. Reimann, S. Frauendorf, and M. Brack, *Z. Phys.* **D 34**, 125 (1995).

82. "Low-spin Termination of the Superdeformed Band in ^{135}Nd ," M.A. Deleplanque, S. Frauendorf, R.M. Clark, R.M. Diamond, F.S. Stephens, J.A. Becker, M.J. Brinkman, B. Cederwall, P. Fallon, L.P. Farris, E.A. Henry, H. Hübel, J.R. Hughes, W. Korten, I.Y. Lee, A.O. Machiavelli, M.A. Stoyer, P. Willsau, J.E. Draper, C. Duyar, and E. Rubel, *Phys. Rev. C* **52**, R2302 (1995).
83. "Evaporation Rates for Liquid Clusters," S. Frauendorf, *Z. Phys.* **D 35**, 191 (1995).
84. "Shears bands in ^{201}Pb and ^{202}Pb ," G. Baldsiefen, P. Maagh, H. Hübel, W. Korten, S. Chmel, M. Neffgen, W. Pohler, H. Grawe, K.H. Maier, K. Spohr, R. Schubart, S. Frauendorf, and H.J. Mair, *Nucl. Phys. A* **592**, 365 (1995).
85. "Lifetimes of Shears bands in ^{199}Pb ," M. Neffgen, G. Baldsiefen, S. Frauendorf, H. Grawe, J. Heese, H. Hübel, H. Kluge, A. Korichi, W. Korten, H.J. Maier, K.H. Maier, J. Meng, D.Mehta, N. Nenoff, M. Piiparinen, M. Schönhofer, R. Schubart, U.J. van Severen, N. Singh, G. Sletten, B.V. Thirumala Rao, and P. Wilssau, *Nucl. Phys. A* **595**, 499 (1995).
86. "Thermodynamics and decay of liquid alkali clusters," S. Frauendorf and V.V. Pashkevich, *Proceedings of the NATO Advanced Study Institute, International School of Solid State Physics, 6th Course: Large Clusters of Atoms and Molecules, Erice, Sicily, June 19 - 29, 1995*, Kluwer Acad. Pub., NATO ASI Series E, vol. 313, p. 201.
87. "General Axial Shapes of Sodium Clusters," S. Frauendorf and V.V. Pashkevich, *Annalen der Physik*, **5**, 34 (1996).
88. "Shapes and Free Energies of Molten Sodium Clusters," S. Frauendorf and V.V. Pashkevich, *Surface Review and Letters*, **3**, 241 (1996).
89. "Magnetic Properties of Sodium Clusters," S. Frauendorf, V.V. Pashkevich and S.M. Reimann, *Surface Review and Letters*, **3**, 441 (1996).
90. "Potential Energy Surfaces of Sodium Clusters with Quadrupole, Hexadecapole and Axially Asymmetric Deformations," S. Frauendorf and S.M. Reimann, *Surface Review and Letters*, **3**, 25 (1996).
91. "Rotating Nuclear Matter," S. Frauendorf and K. Neergård, *Z. Phys.* **A 354**, 381 (1996).
92. "Residual Interaction and Spin Orientation in Rotating Nuclei," S. Frauendorf, *Proc. of Workshop on Gammasphere Physics*, December 1-2, 1995, Berkeley USA, World Scientific Pub., (1996), p. 272.
93. "Nuclei and Clusters," S. Frauendorf, *Nuclear Physics News*, **6 No. 1**, 24 (1996).
94. "Shell - Model Study of Shears Bands in Light Pb Nuclei," S. Frauendorf, J. Reif, and G. Winter, *Nucl. Phys. A* **601**, 41 (1996).
95. "Shears bands in ^{193}Pb ," G. Galdsiefen, M.A. Stoyer, J.A. Cizewski, D.P. McNabb, W. Younes, J.A. Becker, L.A. Bernstein, M.J. Brinkmann, L.P. Farris, E.A. Henry, J.R. Huges, A. Kuhnert, T.F. Wang, B. Cederwall, R.M. Clark, M.A. Deleplanque, R.M. Diamond, P. Fallon, I.L. Lee, A.O. Machiavelli, J. Oliviera, F.S. Stephens, J. Burde, D.T. Vo, and S. Frauendorf, *Phys. Rev. C* **54**, 1106 (1996).

96. "Lifetimes of a Shears Band in ^{139}Sm ," F. Brandolini, M. Ionescu-Bujor, N.H. Medina, R.V. Ribas, D. Bazzacco, M.De Poli, P. Pavan, C. Rossi-Alvarez, G. De Angelis, D. DeAcunã, A. Lunesi, S.E. Napoli, and S. Frauendorf, Phys. Lett. **B 388**, 468 (1996).
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98. "Quality and Interpretation of the Titled Axis Cranking Approximation," S. Frauendorf and J. Meng, Z. Phys. **A356**, 263 (1996).
99. "Magnetic Rotation in the ^{105}Sn nucleus," A. Gadea, G. de Angelis, C. Fahlander, M. De Poli, E. Farnea, Y. Li, D.R. Napoli, Q. Pan, S.M. Lenzi, P. Spolaore, D. Bazzacco, S. Lunardi, C.M. Petrache, P. Pavan, C. Rossi Alvarez, M. Sferrazza, P.G. Bizzeti, A.M. Bizzeti Sona, J. Nyberg, M. Lipoglavsek, J. Persson, J. Cederkäll, D. Seweryniak, A. Johnson, H. Grawe, F. Soramel, M. Ogawa, A. Makishima, R. Schubart, and S. Frauendorf, Phys. Rev. **C55**, R1 (1997).
100. "Evidence for 'Magnetic Rotation' in nuclei: Lifetimes of states in the M1-bands of $^{198,199}\text{Pb}$," R.M. Clark, S.J. Aszatalos, G. Baldsiefen, J.A. Becker, L. Berstein, M.A. Deleplanque, R.M. Diamond, P. Fallon, I.M. Hibbert, H. Hübel, R. Krücken, I.Y. Lee, A.O. Macchiavelli, R.M. MacLeod, G. Schmid, F.S. Stephens, K. Vetter, R. Wadsworth, and S. Frauendorf, Phys. Rev. Lett. **78**, 1868 (1997).
101. "Fission of Metal Clusters," U. Näher, S. Bjørnholm, S. Frauendorf, F. Garcia, and C. Guet, Phys. Rep. **285**, 245 (1997).
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173. "Multiple octupole-type band structures in 220Th: Reflection-asymmetric tidal waves?" W. Reviol, C.J. Chiara, M. Montero, D.G. Sarantites, O.L. Pechenaya, M.P. Carpenter, R.V.F. Janssens, T.L. Khoo, T. Lauritsen, C.J. Lister, D. Seweryniak, S. Zhu, and S.G. Frauendorf, *Physical Review C* **74**, 044305 (2006).
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177. "From Chiral Vibration to Static Chirality in ¹³⁵Nd," S. Mukhopadhyay, D. Almeded, U. Garg, S. Frauendorf, T. Li, P.V. Madhusudhana Rao, X. Wang, S.S. Ghugre, M.P. Carpenter, S. Gros, A. Hecht, R.V.F. Janssens, F.G. Kondev, T. Lauritsen, D. Seweryniak, and S. Zhu, *Phys. Rev. Lett.* **99**, 172501 (2007).
178. "Deformation parameters and transition probabilities for shears bands in Pb isotopes," S. Chmel, S. Frauendorf, and H. Hübel, *Phys. Rev. C* **75**, 044309 (19 pages) (2007).
179. "Dipole-strength distributions up to the particle-separation energies and photodissociation of Mo isotopes," R. Schwengner, N. Benouaret, R. Beyer, F. Dönau, M. Erhard, S. Frauendorf, E. Grosse, A.R. Junghans, J. Klug, K. Kosev, C.Nair, N. Nankov, G. Rusev, K.D. Schilling, A. Wagner, *Nuclear Physics A* **788**, 331C-336C (2007).
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181. "Triaxiality, chiral bands and gamma vibrations in A=99-114 nuclei," S.J. Zhu, Y.X. Luo, J.H. Hamilton, J.O. Rasmussen, A.V. Ramayya, J.K. Hwang, H.B. Ding, X.L. Che, Z. Jiang, P.M. Gore, E.F. Jones, K. Li, I.Y. Lee, W.C. Ma, G.M. Ter-Akopian, A.V. Daniel, S. Frauendorf, V. Dimitrov, J.Y. Zhang, A. Gelberg, I. Stefanescu, J.D. Cole, *Progress In Particle and Nuclear Physics*, Vol. 59, No. 1, 329-336 (2007).
182. "From chiral vibration to static chirality in Nd-135," S. Mukhopadhyay, D. Almeded, U. Garg, S. Frauendorf, T. Li, P.V. MadhusudhanaRao, X. Wang, S.S. Ghugre, M.P. Carpenter, S. Gros, A. Hecht, R.V.F. Janssens, F.G. Kondev, T. Lauritsen, D. Seweryniak, S. Zhu, *Physical Review Letters* **99**, 17, 172501 (2007).
183. "Question of dynamic chirality in nuclei: The case of Pr-134," D. Tonev, G. de Angelis, S. Brant, S. Frauendorf, P. Petkov, A. Dewald, F. Doenau, D.L. Balabanski, Q. Zhong, P. Pejovic, D. Bazzacco, P. Bednarczyk, F. Camera, D. Curien, F. Della Vedova, A. Fitzler, A. Gadea, G. Lo Bianco, S. Lenzi, S. Lunardi, N. Marginean, O. Moeller, D.R. Napoli, R. Orlandi, E. Sahin, A. Saltarelli, J. Valiente Dobon, K.O. Zell, Jing-ye Zhang, Y.H. Zhang, *Physical Review C* **76**, 4, 044313 (2007).
184. "Shell model study of pairing correlations," J.A. Sheikh, P.A. Ganai, R.P. Singh, R.K. Bhowmik, S. Frauendorf, *Physical Review C* **77**, 1, 014303 (2008).
185. "Heart-shaped nuclei: Condensation of rotational-aligned octupole phonons," S. Frauendorf, *Physical Review C* **77**, 2, 021304 (2008).
186. "Electromagnetic transition rates in high-spin bands in Nd-136," S. Mukhopadhyay, D. Almeded, U. Garg, S. Frauendorf, T. Li, P.V.M. Rao, X. Wang, S.S. Ghugre, M.P. Carpenter, S. Gros, A. Hecht, R.V.F. Janssens, F.G. Kondev, T. Lauritsen, D. Seweryniak, S. Zhu, *Physical Review C* **78**, 034311 (2008).
187. "Evolution of chirality from gamma Soft Ru-108 to triaxial Ru-110, Ru-112," Y.X. Luo, S.J. Zhu, J.H. Hamilton, J.O. Rasmussen, A.V. Ramayya, C. Goodin, K. Li, J.K. Hwang, D. Almeded, S. Frauendorf, V. Dimitrov, J.Y. Zhang, X.L. Che, Z. Jang, I. Stefanescu, A. Gelberg, G.M. Ter-Akopian, A.V. Daniel, M.A. Stoyer, R. Donangelo, J.D. Cole, N.J. Stone, *Physics Letters B* **670**, 307-312 (2009).
188. "New band structures in neutron-rich Mo and Ru isotopes," J.H. Hamilton, Y.X. Luo, S.J. Zhu, J.O. Rasmussen, A.V. Ramayya, C. Goodin, K. Li, J.K. Hwang, S. Liu, D. Almeded, S. Frauendorf, V. Dimitrov, J.Y. Zhang, X.L. Che, Z. Jang, I. Stefanescu, A. Gelberg, G.M. Ter-Akopian, A.V. Daniel, I.Y. Lee, H.B. Ding, R.Q. Xu, J.-G. Wang, Q. Xu, M.A. Stoyer, R. Donangelo, N.J. Stone, *Acta Physica Polonica B* **40**, 523-533 (2009).
189. "Structure of ^{240}Pu : Evidence for Octupole Phonon Condensation?" X. Wang, R.V.F. Janssens, M.P. Carpenter, S. Zhu, I. Wiedenhöver, U. Garg, S. Frauendorf, T. Takatsukasa, I. Ahmad, A. Bernstein, E. Diffenderfer, S.J. Freeman, J.P. Greene, T.L. Khoo, F.G. Kondev, A. Larabee, T. Lauritsen, C.J. Lister, B. Meredith, D. Seweryniak, C. Teal, and P. Wilson, *Phys. Rev. Lett.* **102**, 122501 (2009).

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191. "Search for chiral bands in A similar to 110 neutron-rich nuclei," S.J. Zhu, J.H. Hamilton, A.V. Ramayya, J.K. Hwang, J.O. Rasmussen, Y.X. Luo, K. Li, J.G. Wang, X.L. Che, H.B. Ding, S. Frauendorf, V. Dimitrov, X. Qiang, G. Long, Y.Y. Yang, *Chinese Physics C* **33**, 145-147 (2009).
192. "Chirality in odd-A nucleus Nd-135 in particle rotor model," B. Qi, S.Q. Zhang, J. Meng, S.Y. Wang, S. Frauendorf, *Physics Letters B* **675**, 175-180 (2009).
193. "Skyrme-random-phase-approximation description of E1 strength in Mo92-100," J. Kvasil, P. Vesely, V.O. Nesterenko, W. Kleinig, P.-G. Reinhard, S. Frauendorf, *International Journal of Modern Physics E – Nuclear Physics* **18**, 975-985 (2009).
194. "Enhanced electric dipole strength below particle-threshold as a consequence of nuclear deformation," G. Rusev, R. Schwengner, R. Beyer, M. Erhard, E. Grosse, A.R. Junghans, K. Kosev, C. Nair, K.D. Schilling, A. Wagner, F. Doenau, S. Frauendorf, *Physical Review C* **79**, 061302 (2009).
195. Parity doubling in Th-219 and the onset of collectivity above N=126," W. Reviol, D.G. Sarantites, C.J. Chiara, M. Montero, R.V.F. Janssens, M.P. Carpenter, T.L. Khoo, T. Lauritsen, C.J. Lister, D. Seweryniak, S. Zhu, O.L. Pechenaya, S.G. Frauendorf, *Physical Review C* **80**, 011304 (2009).
196. "Instantaneous-shape sampling for calculation of the electromagnetic dipole strength in transitional nuclei," S.Q. Zhang, I. Bentley, S. Brant, F. Doenau, S. Frauendorf, B. Kampfer, R. Schwengner, A. Wagner, *Physical Review C* **80**, 021307 (2009).
197. "Odd-parity Bands of Ru-108, Ru-110, Ru-112," Y.X. Luo, S.J. Zhu, J.H. Hamilton, A.V. Ramayya, C. Goodin, K. Li, X.L. Che, J.K. Hwang, I.Y. Lee, Z. Jiang, G.M. Ter-Akopian, A.V. Daniel, M.A. Stoyer, R. Donangelo, S. Frauendorf, V. Dimitrov, J.Y. Zhang, J.D. Cole, N.J. Stone, J.O. Rasmussen, *International Journal of Modern Physics E – Nuclear Physics* **18**, 1697-1716 (2009).
198. "Magnetic dipole sequences in Rb-83," R. Schwengner, G. Rainovski, H. Schnare, A. Wagner, S. Frauendorf, F. Doenau, A. Jungclaus, M. Hausmann, O. Yordanov, K.P. Lieb, D.R. Napoli, G. de Angelis, M. Axiotis, N. Marginean, F. Brandolini, C.R. Alvarez, *Physical Review C* **80**, 044305 (2009).

1. Invited Talks at Conferences

1. "Coexistence of Different Shapes in the Isotopes of the Lead Region," International Seminar on Nuclear Reactions with Fast Neutrons, Gaussig, Germany, 1975
2. "Changes in the Nuclear Parameters Caused by the Rotation," International Conference on Selected Topics of the Lead Region, Dubna, USSR, 1976
3. "On the Pairing Force at High Angular Momentum," International Symposium on High-Spin States and Nuclear Structure, Dresden, Germany, 1977
4. "Quasiparticle Band Structures above the Yrast Line," Gordon Research Conference on Nuclear Chemistry, New London, USA, 1979
5. "Spectroscopic Trends of Very Neutron Deficient Nuclei in the Lead Region," International Symposium on Future Directions in the Study of Nuclei far from Stability, Nashville, USA, 1979
6. "Quasiparticle Motion in Rotating Nuclei," International Symposium on Extreme States in Nuclei, Dresden, Germany, 1980
7. "Spin Alignment in Heavy Nuclei," Nobel Symposium on High-Spin States, Örenäs, Sweden, 1980
8. "The Cranked Shell Model," International Workshop on Nuclear Physics, Philadelphia, USA, 1980
9. "Quasiparticle Motion above the Yrast Line," 30th All-Union Conference on Spectroscopy, Leningrad, USSR, 1980
10. "M1- Transitions - a Classical Approach," International Workshop on High-Spin States, Riso, Denmark, 1982
11. "Multiband Crossings in Light Yb Nuclei," Gordon Research Conference on Nuclear Chemistry, New London, USA, 1981
12. "Boson Description of Collective States," International Workshop on Nuclear Physics ICTP, Trieste, Italy, 1981
13. "The Cranked Shell Model," International Workshop on Nuclear Physics, ICTP, Trieste, Italy, 1981
14. "Magnetic Moments as a Probe for Rotational Alignment," International Conference on High Angular Momentum Properties of Nuclei, Oak Ridge, USA, 1982
15. "Bands in Gauge Space," Meeting of the American Physical Society, Lexington, USA, 1982
16. "Interplay between Single Particle and Collective Degrees of Freedom," International Conference on Future Trends in Nuclear Physics, Catania, Italy, 1983

17. "Triaxial Shapes - Induced and Detected by Quasiparticles," International Symposium on in Beam Spectroscopy, Debrecen, Hungary, 1984
18. "Triaxial Quasiparticle Orbits in Rotating Nuclei," Fifth Nordic Meeting on Nuclear Physics, Jyväskylä, Finland, 1984
19. "Cranking about a Tilted Axis," Workshop on Future Directions in Nuclear Physics with 4π Gamma Detection Systems of the New Generation, Strasbourg, France, March 1991
20. "Spontaneous Breaking of Signature," Gordon Research Conference on Nuclear Chemistry, New London, USA, June 1991
21. "Tilted Cranking Classification of Multibandspectra," International Conference on Nuclear Structure at High Angular Momentum, Ottawa, Canada, May 1992
22. "Tilted Cranking," 21st International Symposium Rapidly Rotating Nuclei 1992, Tokyo, Japan, October 26-30, 1992
23. "Deformation-Induced Splitting of the Plasmon Resonance," ICW-92, International Workshop on Electronic Excitations and in Clusters, Michigan State University, East Lansing, USA, July 29-31, 1992
24. "Cluster Binding Energies Calculated with the Strutinsky Method," Clusterworkshop, NBI Copenhagen, Denmark, January 5, 1993
25. "The Decline of K-Forbiddenness," Workshop on Nuclear Spectroscopy at the New Arrays, University of Lund, Sweden, June 21-22, 1993
26. "The Decline of K-Forbiddenness," International Conference on the Future of Nuclear Spectroscopy, Crete, June 28 - July 2, 1993
27. "Thermodynamic Properties of the Electron System in Na Clusters," ICW-93, International Workshop on Clusters as a Local Probe of Bulk Phenomena, Michigan State University, East Lansing, USA, August 4-6, 1993
28. "Tilted Cranking," Workshop on High Spin States and Novel Deformations," November 29 - December 18, 1993, ECT*, Trento, Italy
29. "Tilted Cranking," Conference on Physics on Large γ Ray Detectors, August 2-6, 1994, Berkeley, USA
30. "Probing the Spin Orientation," EUROBALL Users Meeting, Strasbourg, France, September 19-23, 1994
31. "Magnetism of Alkali Clusters," International Workshop on Metallic Clusters, January 9-20, 1995, ECT*, Trento, Italy
32. "Nuclei and Clusters - a Prolific Union," The Institute of Physics Annual Congress, Telford, Great Britain, March 27-30, 1995

33. "Thermodynamics and decay of liquid alkali clusters," The NATO Advanced Study Institute, International School of Solid State Physics, 6th Course: Large Clusters of Atoms and Molecules, Erice, Sicily, June 19-29, 1995
34. "Magnetic Rotation," Workshop Nuclear Structure under Extreme Conditions, University of Washington, Seattle, USA, November 20, 1995
35. "Residual Interaction and Spin Orientation in Rotating Nuclei," Workshop on Gammasphere Physics, Decemer 1-2, 1995, Berkeley, USA
36. "Fragmentation of Hot Alkali Clusters," ICW-96, Col de Port, France, February 7-9, 1996
37. "Kerne und Cluster," Deutsche Physikalische Gesellschaft, Tagung des Fachverbandes Physik der Kerne und Hadronen, March 25-29, 1996, Stuttgart, Germany
38. "Magnetic Rotation," NORDITA Study weekend on EUROBALL Physics, May 9-11, 1996, Copenhagen, Denmark
39. "Tilted rotation of weakly deformed and triaxial nuclei," International Conference on Nuclear Structure around the Turn of the Century, June 30 - July 6, 1996, Crete, Greece
40. "Tilted Cranking," Congress commemorating the 30th Anniversary of the Brazilian Physical Society, Aguas de Lindois, Brasil, September 2-6, 1996
41. "Mesoscopic Aspects of Nuclei," Fall meeting of the American Physical Society, Division of Nuclear Physics, Massachusetts Institute of Technology, Cambridge, USA, October 3-5, 1996
42. "Tilted rotation of weakly deformed and triaxial nuclei," EUROBALL user meeting, University of Padua, Italy, October 18-20, 1996
43. "Spontaneous Breaking of Isospin Symmetry," Workshop on Radioactive Beams, GSI Darmstadt, Germany, May 26, 1997
44. "Tilted Cranking," Gordon Research Conference on Nuclear Chemistry, New London, USA, June 15-20, 1997
45. "Magnetism and Currents in Clusters and Nuclei," International Symposium on Atomic Nuclei and Metallic Clusters – Finite Many – Fermion Systems, Prague, Czech Rep., September 1-5, 1997
46. "Symmetries of the Rotating Mean Field," Symposium on New Spectroscopy and Nuclear Structure 1997, dedicated to Aage Bohr and Ben Mottelson, Copenhagen, Denmark, September 16-20, 1997
47. Holzgau 1998
48. "Magnetic Rotation," Marshak Lecture, Spring meeting of the American Physical Society, Miniworkshop on Magnetic Rotation, Columbus, USA, April 18-21, 1998
49. Doenau Workshop 1998

50. "Magnetic Rotation," Invited Talk at the Workshop on Physics at the Coulomb Barrier, Yale University, New Haven, Connecticut, June 11, 1999
51. "Isospin Symmetry Breaking by T=1 p-n Pairing," Invited Talk at the Gordon Research Conference on Nuclear Chemistry, New London, New Hampshire, June 15, 1999
52. "Isospin Symmetry Breaking by T=1 Pairing," International Conference on Achievements and Perspectives in Nuclear Structure, Crete, July 11-17, 1999, Greece
53. "Symmetries of the Proton Neutron Pairfield," Invited Talk at the International Conference on Achievements and Perspectives in Nuclear Structure, Crete, Greece, July 15, 1999
54. "The Atomic Nucleus at the Limits: A Theoretical Perspective," Fall Meeting of Division of Nuclear Physics, American Physical Society, Asilomar, USA, October 20-23, 1999, Session BA
55. "Tilted Axis Cranking," Workshop on Nuclear Moments and Nuclear Structure, Leuven, Belgium, May 17-18, 2000.
56. "Symmetries of the Rotating Mean Field," International Conference and NATO Advanced Research Workshop on High Spin Physics 2001, Warsaw, Poland, February 6-10, 2001
57. "Left-Handed Nuclei," International Conference on Frontiers of Nuclear Structure, Berkeley, California, July 28 – August 2, 2002
58. "Chirality of Nuclear Rotation," Third International Conference on Fission and Neutron-Rich Nuclei," Sanibel Island, Florida, November 3-9, 2002
59. "Exotic phenomena at high spin," Invited Talk, Workshop on AGATA Physics, CNRS Orsay, France, March 2004
60. "Chirality of nuclear rotation," Invited Talk, Annual Meeting of the Division of Nuclear Physics, Chinese Physical Society, Beijing, April 2004
61. "Symmetries of the cranked mean field," Invited Talk, International Nuclear Physics Conference, Goeteborg, Sweden, 2004
62. "Normal persistent currents and gross shell structure at high spin," Invited Talk, Workshop on Mesoscopic Physics, Michigan State University, October 2004
63. "Spontaneous symmetry breaking and rotational bands," Invited Talk, Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Chicago, 2004
64. "Orbitals, Shapes, and Currents," Invited Talk, International Conference on Finite Fermionic Systems Nilsson Model 50 Years," Lund, Sweden, June 14-18, 2005
65. "Isovector Proton-Neutron Pairing," Invited Talk, INT Program 05-3: Nuclear Structure Near the Limits of Stability, Institute for Nuclear Theory, University of Washington, Seattle, November 14-17, 2005

66. "Dynamical and static chirality of rotating triaxial nuclei," Invited lecture, Session: Contemporary Frontiers in Nuclear Structure, American Chemical Society Meeting & Exposition, Atlanta, GA, March 26-30, 2006
67. "A closeup of the spinning nucleus," Invited Lecture, Nuclear Structure '06, Conference on nuclei at the limit, Pollard Technology Conference Center, Oak Ridge, Tennessee, July 24-28, 2006
68. "Emergent phenomena in mesoscopic nuclear systems," Key note talk, Mini-symposium on Nuclei as Mesoscopic Systems, Annual Meeting of the Division of Nuclear Physics of the American Physical Society, Nashville, Tennessee, October 25-28, 2006
69. "Tidal waves and spatial symmetry," Invited Talk, Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New London, New Hampshire, June 3-8, 2007

2. Posters at International Conferences

1. "Shapes of Alkali Clusters," S. Frauendorf and V.V. Pashkevich, ISSPIC 6, Sixth International Symposium on Small Particles and Inorganic Clusters, University of Chicago, USA, September 16-22, 1992
2. "Shapes and Free Energies of Molten Sodium Clusters," S. Frauendorf and V.V. Pashkevich, ISSPIC 7, Seventh International Symposium on Small Particles and Inorganic Clusters, Kobe, Japan, September 12-16, 1994
3. "Magnetic Properties of Sodium Clusters," S. Frauendorf, V.V. Pashkevich, and S.M. Reimann, ISSPIC 7, Seventh International Symposium on Small Particles and Inorganic Clusters, Kobe, Japan, September 12-16, 1994
4. "Potential Energy Surfaces of Sodium Clusters with Quadrupole, Hexadecapole and Axially Asymmetric Deformations," S. Frauendorf and S.M. Reimann, ISSPIC 7, Seventh International Symposium on Small Particles and Inorganic Clusters, Kobe, Japan, September 12-16, 1994

3. Short Talks at International Conferences

1. "Interaction between the S-Bands in the γ soft Nucleus ^{128}Ba ," S. Frauendorf, D. Lieberz, W. Lieberz, P.V. Brentano, and A. Gelbert, Workshop on Future Directions in Nuclear Physics with 4π Gamma Detection Systems of the New Generation, Strasbourg, France, 1991
2. "Tilted Cranking," S. Frauendorf, Spring Meeting of Nuclear Physics Sections (DPG), Salzburg, Austria, February 24-28, 1992
3. "M1-Bands in Light Pb-Isotopes," S. Frauendorf, Annual Meeting of the German Physical Society, Mainz, March 1993
4. "Spinorientationhopping - An Interpretation of the Anomalous Decay of K - Isomers," S. Frauendorf, Annual Meeting of the German Physical Society, München, March 1994
5. "Chiral Rotation," Annual Meeting of the German Physical Society, Göttingen, March 1997
6. "Moments of Inertia at High Spins in Heavy Nuclei," Fall Meeting of Division of Nuclear Physics, American Physical Society, Asilomar, USA, October 20-23, 1999, Session Nuclear Structure IV, M.A. Deleplanque, C.Y. Chu, **S. Frauendorf**, V.V. Pashkevich, A. Unzhakova
7. "Emergence of phase transitions with size," Workshop on Level Density and Gamma Strength in Continuum, Oslo, Norway, May 21-24, 2007
8. "Low-lying dipole strength and nuclear deformation," Workshop on Exotic Modes of Excitation: from Nuclear Structure to Astrophysics, European Center for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy, October 8-12, 2007
9. "Symmetries and collective nuclear excitations," Workshop on Present and Future Exotics in Nuclear Physics, Niels-Bohr-Institute, Copenhagen, Denmark, February 28-29, 2008
10. "High Spin Physics - Recent Achievements and Perspectives," RIKEN Nishina Center, Tokyo, Japan, April 3-5, 2008

4. Series of Lectures

1. "The Shell Correction Method and its Applications," 3 Lectures at the Winterschool of the Nuclear Physicists of the GDR, Falkenberg, Germany, 1973
2. "Shell Effects in the Moment of Inertia," 1 Lecture at the International Winter School on Nuclear Physics, Zakopane, Poland, 1976
3. "Structure of the Yrast States at Moderate Angular Momentum," 2 Lectures at the Winter School of Young Nuclear Physicists, Rathen, Germany, 1977
4. "Quasiparticle Spectra above the Yrast Line," 2 Lectures at the International Winterschool on Nuclear Physics, Bialsko-Biala, Poland, 1978
5. "Interpretation of Yrast states at Medium Angular Momentum," 4 Lectures for Experimental Physicists, Rossendorf, Germany, 1979
6. Regular Undergraduate Course Quantum Mechanics, University of Tennessee, Knoxville, USA, Winter and Spring Quarter, 1981
7. "The Cranked Shell Model," 3 Lectures at the International Workshop on Nuclear Physics ICTP, Trieste, Italy, 1981
8. "Boson Description of Collective States," 2 Lectures at the International Workshop on Nuclear Physics ICTP, Trieste, Italy, 1981
9. "Introduction to High Spin Physics," 6 Lectures in the Central Institute for Nuclear Research, Rossendorf, 1982
10. Regular Graduate Course on Nuclear Theory, University of Tennessee, Knoxville, USA, Fall Quarter, 1982
11. "Application of the Rotating Shell Model," 5 Lectures for Experimentalists, Oak Ridge National Laboratory, Oak Ridge, USA, 1982
12. "Rotation about a Tilted Axis," 1 Lecture at the International School on Large γ Detection Arrays, Riso, Denmark, 1991
13. "Nuclear Collective Models," 5 Lectures at the International Postgraduate School on Nuclear Physics, University of Surrey, Guildford, UK, 1991
14. "Tilted Cranking," 3 Lectures at the Lawrence Berkeley Laboratory, Berkeley, USA, July 1992
15. "Physics of the Metal Clusters," Holiday Course on Selforganization and Quantum Chaos, Technical University, Dresden, Germany, September 21 - October 2, 1992
16. "The Spin Orientation Degree of Freedom," 3 Lectures at the Nuclear Science Division, Lawrence Berkeley Laboratory, Berkeley, USA, July/August 1993

17. "Shears Bands and C_4 Symmetry," 2 Lectures at the Lawrence Berkeley Laboratory, Berkeley, USA, July 1994
18. "Nuclear Physics," graduate course at University of Notre Dame, Indiana, USA, Spring 1999
19. "Quantum Mechanics I," graduate course at University of Notre Dame, Indiana, USA, Fall 1999
20. "Quantum Mechanics II," graduate course at University of Notre Dame, Indiana, USA, Spring 2000
21. "Electromagnetic Waves," undergraduate course at University of Notre Dame, Indiana, USA, Spring 2005
22. "Symmetries in Nuclear Physics," 4 lectures, 6th Nordic Summer School in Nuclear Physics, Hillerd, Denmark, August 8-19, 2005
23. "Electricity and Magnetism," undergraduate course at University of Notre Dame, Indiana, USA, Fall 2005
24. "Electromagnetic Waves," undergraduate course at University of Notre Dame, Indiana, USA, Spring 2006
25. "Electricity and Magnetism," undergraduate course at University of Notre Dame, Indiana, USA, Fall 2006
26. "Electromagnetic Waves," undergraduate course at University of Notre Dame, Indiana, USA, Spring 2007
27. "Nuclear Rotation," 4 lectures, Institute for Radiation Physics, Research Center Dresden-Rossendorf, March 2008
28. "Mathematical Methods in the Physical Sciences I, undergraduate course at University of Notre Dame, Indiana, USA, Fall 2008

5. Recent Seminars and Colloquia (Since 1990)

1. "Geometrical Interpretation of High Spin Orbitals," University of Köln, February 1990
2. "Semiclassical Interpretation of Orbitals in Rotating Potentials," University of Liverpool, UK, March 1990
3. "Superdeformed Orbitals," LBL Berkeley USA, June 1990
4. "Pseudospin as Classification of Rotating Single Particle States," KFA Jülich, July 1990
5. "The CSM in the Unpaired Regime," NBI Copenhagen, Denmark, October 1990
6. "Pseudospin as Classification of Rotating Single Particle States," University of Köln, October 1990
7. "The CSM after the Transition into the Unpaired Regime," University of Köln, March 1991
8. "Interaction of the $h_{11/12}$ and $h_{9/2}$ Bands in ^{163}Tm ," NBI Copenhagen, Denmark, October 1990
9. "W and Os Nuclei - Tilted and Cranked," NBI Copenhagen, Denmark, April 1991
10. "Single Particle Motion in Rotating Potentials," Nuclear Physics Division Seminar, ORNL Oak Ridge, USA, July 1991
11. "Tilted Cranking," Theory Group Seminar, LBL Berkeley, USA, August 1991
12. "Rotation about a Tilted Axis," Theory Seminar, ZfK Rossendorf, October 1991
13. "Non-Spherical Shapes of Sodium Clusters," S. Frauendorf and V.V. Pashkevich, Experimental Group Meeting, Niels-Bohr-Institute, Copenhagen, May 30, 1992
14. "Shapes and Binding Energies of Na Clusters," T-Division, LANL Los Alamos, USA, July 28, 1992
15. "Shapes of Sodium Clusters," Physics Division Seminar, ORNL Oak Ridge, USA, August 10, 1992
16. "Nuclei and Alkali Clusters," Nuclear Science Division Seminar, LBL Berkeley USA, September 14, 1992
17. "Shapes of Na Clusters," Yukawa Institute for Advanced Studies, Kyoto, Japan, October 20, 1992
18. "Orientation of the Angular Momentum at High Spin," Theory Seminar, FZ-Rossendorf, Dresden, Germany, January 18, 1993

19. “ $\Delta I = 1$ Bands in the light Pb Nuclei,” Seminar of the Institut of Nuclear and Radiation Physics, University Bonn Germany, February 18, 1993
20. “Strutinsky Calculations of the Shapes and Binding Energies of Alkali Clusters,” Seminar of the Institute for Theoretical Physics, University Regensburg, Germany, February 16, 1993
21. “The Shape of Quantal Droplets: Alkali Atom Clusters Compared with Nuclei,” Nuclear Physics Seminar, University of Tennessee, April 21, 1993
22. “Rotation about a Nonprincipal Axis,” Theoretical Physics Seminar, Oak Ridge National Laboratory, USA, April 29, 1993
23. “The Onset of Chaos in Rotating Nuclei,” Nuclear Physics Division Seminar, Oak Ridge National Laboratory, USA, April 29, 1993
24. “The Decline of K-Forbiddenness,” Nuclear Physics Division Seminar, Oak Ridge National Laboratory, USA, September 1, 1993
25. “Die Form von Quantentröpfchen: Alkalicluster und Kerne (Shape of Quantum Droplets: Alkali Clusters and Nuclei), P-Colloquium at Hahn - Meitner - Institut, Berlin, Germany, January 3, 1994
26. “Shape and Abundances of Molten Sodium Clusters,” Niels - Bohr Institute, Copenhagen, Denmark, April 5, 1994
27. “Magnetic Rotation,” Circus, Niels - Bohr Institute, Copenhagen, Denmark, April 6, 1994
28. “Shear Bands,” Department of Physics, Vanderbilt University, Nashville, USA, July 1, 1994
29. “ C_4 Symmetry in Superdeformed Nuclei,” Nuclear Physics Division Seminar, Oak Ridge National Laboratory, USA, July 6, 1994
30. “Nuclei and Clusters - a Prolific Union,” Department of Physics and Astronomy, University of Tennessee, Knoxville, USA, July 8, 1994
31. “Magnetism and Rotation of Sodium Clusters,” Department of Physics, Kyoto University, Japan, September 19, 1994
32. “Clusters and Nuclei - a Prolific Union,” Yukawa Institute for Advanced Studies, Kyoto, Japan, September 20, 1994
33. “Shear Bands and Magnetic Rotation,” Kernphysikalisches Seminar, Hahn - Meitner - Institut, Berlin, October 18, 1994
34. “Tilted Cranking - das Abkippen der Rotationsachse bei hohem Kernspin,” Kernphysikalisches Kolloquium, Technische Universität and Ludwig Maximilian Universität München, December 9, 1994
35. “Magnetic Rotations,” Department of Physics, University of Padua, Italy, February 21, 1995

36. "Tilted Axis Cranking," Department of Physics, University of Surrey, Great Britain, March 30, 1995
37. "The Nucleus - a Mesoscopic System," Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, Berkeley, USA, May 3, 1995
38. "The Nucleus - a Mesoscopic System," INFN, Laboratori Nazionali di Legnaro, Legnaro, Italy, July 13, 1995
39. "Statistischer Zerfall von Metall Clustern," IKH - Research Center Rossendorf, Germany, February 5, 1996
40. "Magnetismus von Metall Clustern und Relation zur Hochspin Kernphysik," IKH - Research Center Rossendorf, Germany, June 3, 1996
41. "Persistent Currents in Clusters and Nuclei," Nuclear Physics Forum, Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, Berkeley, USA, July 11, 1996
42. "Magnetic Rotation," Nuclear Physics Forum, Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, Berkeley, USA, July 15, 1996
43. "High Spin Physics," Graduiertenkolleg of the Department of Physics, University of Tuebingen, Germany, December 6, 1996
44. "Chiral Rotation," Nuclear Physics Forum, Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, Berkeley, USA, February 20, 1997
45. Colloquium of the Department of Physics, University of Notre Dame, USA, March 24, 1997
46. "Magnetic Rotation," Colloquium of the Department of Physics, Technical University Dresden, April 12, 1997
47. "Cluster Magnetism and Nuclear Rotation," Nuclear Physics Forum, Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, Berkeley, USA, August 24, 1997
48. "Nuclei and Clusters," Institut fuer Kern- und Strahlenphysik, University of Bonn, Germany, January, 1998
49. "Magnetic Rotation," Nuclear Physics Division, Argonne National Laboratory, USA, April, 1998
50. "Consequences of Proton-Neutron Pairing," Institut fuer Kern- und Hadronenphysik, Forschungszentrum Rossendorf, Germany, August, 1999
51. "Spontaneous Breaking of Isospin Symmetry," Nuclear Physics Seminar, Department of Physics, University of Notre Dame, USA, September 5, 1999
52. "Magnetic Rotation," Colloquium, National Cyclotron Laboratory, Michigan State University, USA, September 29, 1999

53. "Isospin Symmetry and Proton-Neutron Pairing," Nuclear Physics Division, Argonne National Laboratory, USA, October 21, 1999
54. "Study of structure of very heavy and neutron rich nuclei by means of the relativistic mean field theory," Colloquium, Research Center Rossendorf, Germany, July 15, 2002
55. "Nuclear tidal waves," Seminar, Beijing University, April 2004
56. "Tilted rotation," Seminar, Beijing University, April 2004
57. "Symmetries of the cranked mean field," Colloquium, Niels Bohr Institute, University of Copenhagen, June 2004
58. "Experimental evidence for chirality," Seminar, Niels Bohr Institute, University of Copenhagen, June 2004
59. "Probing shape coexistence by dipole excitations," Seminar, Institute for Nuclear and Hadronic Physics, Research Center Rossendorf, Germany, July 2004
60. "Left-handed Nuclei," Colloquium, Department of Physics and Astronomy, Vanderbilt University, Nashville, USA, October 27, 2004
61. "New Symmetries of Rotating Nuclei," Colloquium, Physics Division, Argonne National Laboratory, January 14, 2005
62. "Emergent phenomena in mesoscopic systems," Colloquium, National Superconducting Cyclotron Laboratory, Department of Physics, Michigan State University, East Lansing, November 17, 2006
63. "Emergence of phases with size," Colloquium, Research Center Dresden-Rossendorf, Dresden, Germany, October 2, 2007
64. "Tidal Waves and Boson Condensation in Transitional Nuclei," Colloquium, INFN Legnaro, Italy, October 8, 2007
65. "Dynamic and Static Chirality," RIKEN Colloquium, Nishina Center, Tokyo, Japan, April 9, 2008
66. "Spontaneous symmetry breaking and appearance of quantal rotation in nuclei," Yukawa Institute, Kyoto, Japan, April 11, 2008
67. "High spin physics- achievements and perspectives," Seminar, Department Nuclear Science and Technology, Peking University, June 10, 2008
68. "Physics at the University of Notre Dame," Seminar, Department Nuclear Science and Technology, Peking University, June 10, 2008
69. "Spontaneous symmetry breaking and appearance of quantal rotation in nuclei," Colloquium, GANIL, France, July 4, 2008
70. "Spontaneous symmetry breaking and appearance of quantal rotation in nuclei," Colloquium, CRNS, Universite de Paris Sud, France, July 9, 2008

71. "Interaction of high-intensity Lasers with nuclei – possibilities and restrictions," Seminar, Institute for Radiation Physics, Research Center Dresden-Rossendorf, August, 21, 2008

6. Contributed Papers

1. “High Spin Rotational States in ^{164}Yb and ^{180}Os ,” S. Frauendorf, P. Gippner, K.H. Kaun, W. Neubert, F. Sary, W. Schulze, *Proceedings of the International Conference on Nuclear Physics*, München 1973, Contributed Papers 191
2. “Lifetimes of Shears Bands in ^{199}Pb ,” H. Hübel, M. Neffgen, G. Baldsiefen, W. Korten, D. Mehta, N. Nenoff, U.J. van Severen, H. Grawe, H. Kluge, K.H. Maier, A. Korichi, M. Piiparinen, Jie Meng and S. Frauendorf, *Conf. on Physics on Large γ Ray Detectors*, Berkeley, USA 1994