

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

1968-2010	Research and Senior 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
1999-2020	Professor of Physics at the University of Notre Dame
2020-present	Professor Emeritus at the University of Notre Dame

Honors

Prize of the CINR, Academy of Science of GDR (1978)
 National Award of East Germany for Scientific Achievements (1983)
 Visiting Professor: University of Tennessee (1981/82)
 Fellow of American Physical Society, 2003
 Fellow of the American Association for the Advancement of Science, 2012
 2015 Outstanding referee of the American Physical Society 2015
 2025 Outstanding referee of the European Journal of Physics A

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, Phys. Rev. Lett., Nature, Eur. Phys. J. A,
 Int. J. Mod. Phys.

Guest editor 20015/16 Journal Symmetry

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

Publications: 303 refereed journal publications,
 over 200 invited talks and colloquia,

Web of Science:

13111 Citations in Nuclear Physics and Mesoscopic Systems,
 average citations/item 44.6
 h-index 57

Google Scholar:

18094 Citations in Nuclear Physics and Mesoscopic Systems
 h-index 69
 i10-index 197

List of Publications (most important highlighted)

1. "Rotational Motion and Non-Adiabaticity in the Ground State," S. Frauendorf, D. Janssen, and L. Münchow, Nucl. Phys. A **125**, 369 (1969).
2. "Projection Description of Rotational and Quasirotational 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, Phys. Lett. 34 B, 469 (1971).
7. "Boson Description of Collective States," D. Janssen, F. Döna, S. Frauendorf, and R.V. Jolos, Nucl. Phys. A **172**, 145 (1971).
8. "Phase transition in High Spin States," S. Frauendorf, Publication JINR Dubna P **4-6990** (1973).
9. "The influence of 1 QP-State Equilibrium Deformations on E1-Transition Probabilities," W. Andrejtscheff, F.R. May, L. Münchow, and S. Frauendorf, Phys. Lett. **44 B**, 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 Bands 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, *Phys. Lett.* **55 B**, 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, *Nucl. Phys. A* **262**, 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, *Nucl. Phys. A* **263**, 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, *Phys. Lett.* **68 B**, 113 (1977).
20. "The Instability of Rapidly Rotating Nuclei towards Emission of Nucleons," T. Døssing, S. Frauendorf, and H. Schulz, *Nucl. Phys. A* **287**, 137 (1977).
21. "Description of Odd Transitional Nuclei in Terms of Core-Quasiparticle Models," F. Döna and S. Frauendorf, *Phys. Lett.* **71 B**, 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, *Nuclonica* **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, *Nucl. Phys. A* **314**, 27 (1979).
26. "Quasiparticle Spectra near the Yrastline," R. Bengtsson and S. Frauendorf, *Nucl. Phys. A* **327**, 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, *Phys. Rev. Lett.* **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, *Phys. Lett.* **100 B**, 219 (1981).

34. "Evidence for Deformed Ground States in Light Kr- Isotopes Nuclear Collective Dynamics," R.B. Piercey, J.H. Hamilton, R. Soundrayanaga, 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, *Phys. Rev. Lett.* **47**, 1514 (1981).
35. "Boson Description of Collective States," F. Döna u 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, *Phys. Lett.* **108 B**, 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, *Phys. Lett.* **108 B**, 243 (1982).
39. *Proceedings of the Nuclear Physics School*, F. Döna u and S. Frauendorf, Poiana Brasow, 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, *Nucl. Phys. A* **393**, 135 (1983).
42. "Triaxial Shapes of Rotating Nuclei with Neutron Numbers 88, 89, 90," S. Frauendorf and F.R. May, *Phys. Lett.* **125 B**, 245 (1983).
43. "Interplay between Single Particle and Collective Degrees of Freedom in Rapidly Rotating Nuclei," S. Frauendorf, *Nucl. Phys. A* **409**, 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, *Phys. Lett.* **131 B**, 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, *Phys. Rev. C* **28**, 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, *Phys. Rev. C* **29**, 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, *Phys. Lett.* **141 B**, 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, *Nucl. Phys. A* **431**, 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. "In-Beam Study of AG-105 and Configuration-Dependent Triaxiality in Nuclei around A=105," H.J. Keller, S. Frauendorf, U. Hagemann, L. Käubler, H. Prade, and F. Stary, *Nucl. Phys. A* **444**, 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, Phys. Lett. **166 B**, 252 (1986).
56. "The Routhian in 'Gauge Space'," Jing-ye Zhang, J.D. Garrett, J.C. Bacelar, and S. Frauendorf, Nucl. Phys. A **543**, 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. "Multi-quasi-particle induced prolate oblate transitions in rapidly rotating $n=88,90$ nuclei," Y.S. Chen, S. Frauendorf, L.L. Riedinger, Phys. Lett. B **171** 1 pp 7-12 (1986).
59. "Semiclassical Description of Pairing Force Matrix Elements at Finite Rotational Frequencies," E. Vigezzi, D.R. Bes, R.A. Broglia, and S. Frauendorf, Phys. Rev. C **38**, 1448 (1988).
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. Tjom, S. Frauendorf, A. Atac, M. Bergström, A. Bracco, A. Brockstedt, H. Carlsson, P. Eckström, J.M. Espino, B. Herskind, F. Ingbreetsen, 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. "Cranking about a Tilted Axis," S. Frauendorf, *Proceedings of the International Symposium on Future Directions in Nuclear Physics with 4π Gamma Detection Systems of the New Generation*, Strasbourg 1991, Invited Lectures, AIP Conference Proceedings 259, p. 223 (1992).
62. "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, Phys. Lett. B **247**, 149 (1992).
63. "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.
64. "Tilted Cranking," S. Frauendorf, Nucl. Phys. A **557**, 259c (1993).

65. "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, Nucl. Phys. A **557**, 211c (1993).
66. "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, Nucl. Phys. A **557**, 469c (1993).
67. "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, Phys. Rev. C **47**, R926 (1993).
68. "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.
69. "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.
70. "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, Phys. Lett. B **298**, 54 (1993).
71. "Poisson and Porter-Thomas Fluctuations in Off-Yrast Rotational Transitions," M. Matsuo, T. Døssing, B. Herskins, and S. Frauendorf, Nucl. Phys. A **564**, 345 (1993).
72. "Shapes of Na Clusters," S. Frauendorf and V.V. Pashkevich, Zeitschrift für Physik D **26**, S98 (1993).
73. "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, Nucl. Phys. A **571**, 337 (1994).
74. "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. Harissopulos, and D. Loukas, I.N.P., National Center for Scientific Research Demokritos, Athens, Greece, 1994.

75. “‘Shear Bands’ in ^{199}Pb and ^{200}Pb ,” G. Baldsiefen, H. Hübel, W. Korten, D. Mehta, N. Nenoff, B.V. Thirmuala Rao, P. Willsau, H. Grawe, J. Heese, H. Kluge, K.H. Maier, R. Schubart, S. Frauendorf, and H.J. Maier, Nucl. Phys. A **574**, 521 (1994).
76. “Consequences of neutron-proton interaction on backbending,” S. Frauendorf, J.A. Sheikh, and N. Rowley, Phys. Rev. C **50**, 196 (1994).
77. “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, Phys. Rev. C **50**, 1360 (1994).
78. “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.
79. “Tilted four-quasiparticle bands in eve-even Xe and Ba nuclei,” F. Döna, S. Frauendorf, O. Vogel, A. Gelbert, and P. von Brentano, Nucl. Phys. A **584**, 241 (1995).
80. “‘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 T **56**, 44 (1995).
81. “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, Nucl. Phys. A **587**, 111 (1995).
82. “Triaxial Shapes of Sodium Clusters,” S.M. Reimann, S. Frauendorf, and M. Brack, Z. Phys. D **34**, 125 (1995).
83. “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).

84. "Evaporation Rates for Liquid Clusters," S. Frauendorf, Z. Phys. D **35**, 191 (1995).
85. "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).
86. "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).
87. "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.
88. "General Axial Shapes of Sodium Clusters," S. Frauendorf and V.V. Pashkevich, *Annalen der Physik*, **5**, 34 (1996).
89. "Shapes and Free Energies of Molten Sodium Clusters," S. Frauendorf and V.V. Pashkevich, *Surface Review and Letters*, **3**, 241 (1996).
90. "Magnetic Properties of Sodium Clusters," S. Frauendorf, V.V. Pashkevich and S.M. Reimann, *Surface Review and Letters*, **3**, 441 (1996).
91. "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).
92. "Rotating Nuclear Matter," S. Frauendorf and K. Neergård, Z. Phys. A **354**, 381 (1996).
93. "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.
94. "Nuclei and Clusters," S. Frauendorf, *Nuclear Physics News*, **6 No. 1**, 24 (1996).

95. "Shell - Model Study of Shears Bands in Light Pb Nuclei," S. Frauendorf, J. Reif, and G. Winter, Nucl. Phys. A **601**, 41 (1996).
96. "Shears bands in ^{193}Pb ," G. Baldsiefen, 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. Hugues, 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).
97. "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).
98. "Can hexadecapole deformation lead to $\Delta I = 2$ staggering in superdeformed bands?" F. Döna, S. Frauendorf and J. Meng, Phys. Lett. B **387**, 667 (1996).
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303. A. Saracino , A. D. Ayangeakaa , Q. B. Chen , **S. Frauendorf** , S. R. Johnson , R. V. F. Janssens , E. Churchman, S. W. Finch , D. Gribble , F. E. Idoko , X. K.-H. James , T. M. Kowalewski , M. Lee, A. Psaltis and K. Song, **Low-Energy Dipole Strength Distribution in ^{102}Ru : Coexistence of Scissors and Octupole Resonances**, Pys. Rev. Lett. **136**, 252501 (2026), <https://doi.org/10.1103/rcb1-gntj>
- 304.

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 in Nuclear Structure, 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, NH, 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, 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, PA, 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, NH, 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, TN, 1982
15. "Bands in Gauge Space," Meeting of the American Physical Society, Lexington, KY, 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, NH, June 1991
21. "Tilted Cranking Classification of Multiband Spectra," 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, MI, 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, MI, 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, CA
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, WA, November 20, 1995
35. "Residual Interaction and Spin Orientation in Rotating Nuclei," Workshop on Gammasphere Physics, December 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, MA, 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, NH, 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. Holzhau 1998
48. "Magnetic Rotation," Marshak Lecture, Spring meeting of the American Physical Society, Miniworkshop on Magnetic Rotation, Columbus, OH, 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, CT, 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, NH, 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, CA, 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, FL, 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, MI, 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, IL, 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, WA, 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, TN, 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, TN, October 25-28, 2006
69. "Emergence of phase transitions with size," Workshop on Level Density and Gamma Strength in Continuum, Oslo, Norway, May 21-24, 2007
70. "Tidal waves and spatial symmetry," Invited Talk, Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New London, NH, June 3-8, 2007
71. "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.
72. "Symmetries and collective nuclear excitations," Workshop on Present and Future Exotics in Nuclear Physics, Niels-Bohr-Institute, Copenhagen, Denmark, February 28-29, 2008
73. "High Spin Physics - Recent Achievements and Perspectives," RIKEN Nishina Center, Tokyo, Japan, April 3-5, 2008
74. "Measured g factors and the tidal wave description of transitional nuclei near A-100," Nuclear Structure 2008, Michigan State University and NSCL, East Lansing, MI, June 3-6, 2008
75. "Keeping in Shape," Joe Hamilton - 50 Years at Vanderbilt, Vanderbilt University, TN, October 3-4, 2008

76. “Instantaneous-shape sampling for calculating the electromagnetic dipole strength in transitional nuclei,” 2nd Workshop on Level Density and Gamma Strength, Oslo, May 11 - 15, 2009
77. Tidal Waves - a non-adiabatic microscopic description of the yrast states in near spherical nuclei,” Third International Conference on Collective Motion in Nuclei Under Extreme Conditions (COMEX3), Mackinac Island, MI, 2–5 June 2009
78. “Calculation of the Wigner Term in Binding Energies by Diagonalization of the Isovector Pairing Hamiltonian,” 6th FRIB Theory workshop, Argonne National Laboratory, IL, March 22-24, 2010
79. “Wigner term generated by isovector p-n pairing,” invited talk *Nuclear Structure 2010*, Berkeley, CA, August 8-13, 2010
80. “Tidal Waves a non-adiabatic microscopic description of the yrast states in near-spherical nuclei,” invited talk 17th *Nuclear Physics Workshop “Marie and Pierre Curie”* Kazimierz Dolny, Poland, September 22-26, 2010
81. “Broken Symmetries and their precursors,” Symposium “Waltzing to the nuclear limits,” Hilton Head, SC, February 15–27, 2011
82. “Tidal wave in ^{102}Pd : Rotating condensate of up to seven d-bosons,” Fourteenth International Conference on “*Capture gamma-ray spectroscopy and related topics*,” University of Guelph, Canada, August 28–September 2, 2011
83. “Dipole response of transitional nuclei”, International workshop “*The Nuclear Dipole Polarizability and its Impact on Nuclear Structure and Astrophysics*” ECT*, Trento, Italy, June 18-22, 2012
84. “Mean Field and beyond: Progress and challenges in describing medium and heavy nuclei,” invited talk *Nuclear Structure 2012*, Argonne National Laboratory, August 13 – 17, 2012
85. “Crossover between different symmetries “ 5th International Conference on “*Fission and properties of neutron-rich nuclei*”, Sanibel Island, November 4 -12, 2012
86. “Wigner term generated by isovector p-n pairing”, *Heavy Ion Accelerator Symposium 2013*, Canberra, Australia, April 8-12, 2013

87. “Low-energy magnetic radiation: deviations from GOE”, *Fourth Conference on Nuclei and Mesoscopic Physics 2014*, Natl. Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI, MAY 05-09, 2014
88. “Low-Energy Magnetic Radiation”, Fifteenth International Conference on “*Capture gamma-ray spectroscopy and related topics*,” Dresden, Germany, August 25-29, 2014
89. “*Chirality: From Symmetry to Dynamics*”, NORDITA Workshop on Chiral Bands in Nuclei, Stockholm, Sweden, 20-22 April 2015.
90. “*The spin-aligned coupling scheme: Isoscalar pair correlations vs. isoscalar interaction*”, NORDITA Workshop on Chiral Bands in Nuclei, Stockholm, Sweden, 20-22 April 2015.
91. “*Coherence and Decoherence of Collective Motion - An Overview*”, Gordon Research Conference Nuclear Chemistry, Colby-Sawyer College. New London, NH, May 31 - June 5, 2015.
92. “*Rotation of triaxial nuclei: wobbling and chirality*”, Heavy Ion Accelerator Symposium 2015, Canberra, Australia, September 14-18, 2015.
93. “*Low energy magnetic radiation (LEMAR)*”, 2015 Fall Meeting of the APS Division of Nuclear Physics, Santa Fe NM, October 28-31, 2015.
94. “*Open questions in nuclear collective motion*”, XI Latin American Symposium on Nuclear Physics and Applications, Medellin, Colombia. 27th November - 4th December, 2015.
95. “*Statistical properties of Low-Energy Magnetic Radiation (LEMAR)*”, Ect* Workshop on Statistical properties of nuclei, 11 Jul 2016 to 15 Jul 2016,, Trento, Italy
96. “*Proton – neutron pairs in $N \approx Z$ nuclei: a theory perspective*”, AGATA Physics Workshop San Servolo, Venice, from 27th June to 1st July, 2016.
97. “*Proton-neutron pairs in $N \approx Z$ nuclei: Cooper vs. spin-aligned*”, ECT* Workshop on Proton-neutron pairing and alpha-like quartet correlations in nuclei, 19 - Sep 2016 to 23 Sep 2016, Trento, Italy
98. “*Low-energy magnetic radiation of warm nuclei*” Sixth International Conference on Fission and Properties of Neutron-Rich Nuclei, November 6-12, 2016, Sanibel Island, Florida.

99. *Triaxiality and single particle degrees of freedom*, XXIV Nuclear Physics Workshop, 20-24 September 2017, Kazimierz Dolny, Poland
100. *Triaxiality and single particle degrees of freedom*, International Conference on Shapes and Symmetries in Nuclei: From Experiment to Theory (SSNET17), Gif sur Yvette, France, November 6-10, 2017.
101. *Signatures for proton-neutron pairs in $N \sim Z$ nuclei*, International workshop on Recent advances on proton-neutron pairing and quartet correlations in nuclei, CAE-Saclay, France, September 10-14, 2018
102. *Decoherence of Collective Motion in Warm Nuclei*, IV International Conference on Nuclear Structure and Dynamics, Venice May 11-17, 2019
103. *Topological classification of particle-rotor systems*, International Conference on Shapes and Symmetries in Nuclei: from Experiment to Theory (SSNET22 Conference), Orsay, France, May 30-June 03, 2022
104. *Wobbling motion in triaxial nuclei*, International Conference on Chirality and wobbling in atomic nuclei (CWAN'23), Huizu, China, July 10-14, 2023
105. *Microscopic aspects of γ -softness in atomic nuclei*, 17th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics - CGS17, Grenoble, France, July 17-21, 2023
106. *Heart-shaped nuclei: Condensation of rotationally aligned octupole phonons*, International Workshop "Shapes and Dynamics of Atomic Nuclei: Contemporary Aspects" (SDANCA 23), Sofia, Bulgaria, September 21-23, 2023
107. *Nuclear triaxiality: Wobbling, chirality and shape fluctuations*, International symposium on single-particle and collective motions from nuclear many-body correlation (PCM2025), University of Aizu, Japan, March 4 to 7, 2025

108. *Theoretical description of neutron-proton pairing in finite nuclei*, ESNT Workshop "Ab initio many-body calculations: where is the nuclear pairing gone?" – Saclay, France, May 13-21, 2025
109. *Development of the γ strength function with the neutron number*, 18th International Symposium on Gamma-Ray Spectroscopy and Related Topics, Monterey USA, June 14-19, 2026
110. *Two-phonon gamma-vibrational band structures in rare-earth nuclei*, 18th International Symposium on Gamma-Ray Spectroscopy and Related Topics, Monterey USA, June 14-19, 2026

2. Posters at 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, IL, 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
5. "Chiral Rotation and Chiral Rotation in the A=135 Region," Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New London, NH, June 3-8, 2007
6. "Tidal wave description of energies and electromagnetic properties of transitional nuclei," Gordon Research Conference on Nuclear Chemistry, Colby-Sawyer College, New London, NH, June 3-8, 2009
7. "Microscopic calculation of the IBM parameters by potential energy surface mapping," I. Bentley, S. Frauendorf, *Nuclear Structure 2010*, Berkeley, CA, August 8-13, 2010
8. Systematic study of E2 matrix elements in the framework of the TPSM, Systematic study of E2 matrix elements in the framework of the TPSM", S. Frauendorf, G. H. Bhat, S. Jehangir, Nazira Nazir, K. Qureshi, N. Rather, S. p. Rouoof, J. Sheikh, *18th International Symposium on Gamma-Ray Spectroscopy and Related Topics*, Monterey USA, June 14-19, 2026

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

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, TN, 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, CA, 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, CA, July/August 1993
17. "Shears Bands and C_4 Symmetry," 2 Lectures at the Lawrence Berkeley Laboratory, Berkeley, CA, July 1994
18. "Nuclear Physics," graduate course at University of Notre Dame, IN, Spring 1999
19. "Quantum Mechanics I," graduate course at University of Notre Dame, IN, Fall 1999
20. "Quantum Mechanics II," graduate course at University of Notre Dame, IN, Spring 2000
21. "Electromagnetic Waves," undergraduate course at University of Notre Dame, IN, 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, IN, Fall 2005
24. "Electromagnetic Waves," undergraduate course at University of Notre Dame, IN, Spring 2006
25. "Electricity and Magnetism," undergraduate course at University of Notre Dame, IN, Fall 2006
26. "Electromagnetic Waves," undergraduate course at University of Notre Dame, IN, 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, IN, Fall 2008
29. "Mathematical Methods in the Physical Sciences II, undergraduate course at University of Notre Dame, IN, Spring 2009
30. Mathematical Methods in the Physical Sciences I, undergraduate course at University of Notre Dame, IN, Fall 2010
31. Nuclear Physics I, graduate course at course at University of Notre Dame, IN, Fall 2011
32. Nuclear Physics I, graduate course at course at University of Notre Dame, IN, Fall 2012
33. "Quantal Rotation", 4 Lectures at the A3F-CNS Summer School of the CNS Uuniversity Tokyo, Japan, August 20-24 2022

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 $h_{11/2}$ 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
72. “Spontaneously broken symmetries,” Colloquium, Washington University in St. Louis, April 2010
73. “Instantaneous Shape sampling,” Seminar, FZ Dresden, Germany, August 2010
74. “Damping of the GDR,” Helmholtz Center Dresden-Rossendorf, Germany, July 26, 2010
75. “Basic Science at the National Ignition Facility,” Helmholtz Center Dresden-Rossendorf, Germany, July 22, 2011
76. “Transverse Wobbling”, Forum, Nuclear Science Division, Lawrence Berkeley Laboratory, October 21, 2011
77. “Low-Energy Enhancement of Magnetic Dipole Radiation”, Helmholtz Zentrum Dresden Rossendorf, Germany, July 19, 2013
78. “Low-Energy Enhancement of Magnetic Dipole Radiation ” Forum, Nuclear Science Division, Lawrence Berkeley Laboratory, August, 06, 2013
79. “The spin-aligned coupling scheme: Isoscalar pair correlations vs. isoscalar interaction”, NORDITA Stockholm, Sweden, 22 April 2015.
80. “LEMAR-Low-energy magnetic radiation ” Forum, Nuclear Science Division, Lawrence Berkeley Laboratory, May, 12, 2017
81. “Quantal Rotation: Molecules and Nuclei” Rutgers University, New Brunswick NJ, March 8, 2017

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