

## Publications in Refereed Journals

1. A New Approach to the 3D Faddeev Equation for Three-Body Scattering, Ch. Elster, W. Glöckle, H. Witala, arXiv:0805.2010 [nucl-th], submitted to Few Body Systems.
2. Faddeev and Glauber Calculations at Intermediate Energies in a Model for n+d Scattering, Ch. Elster, T. Lin, W. Glöckle, S. Jeschonnek, arXiv:0805.2010 [nucl-th], submitted to Physical Review C.
3. Influence of the  $N^*(1440)$  and  $N^*(1535)$  Resonances in Intermediate Energy  $pp$  and  $np$  Scattering, A. Pricking, Ch. Elster, A. Gårdestig, F. Hinterberger and the EDDA Collaboration, arXiv:0708.3692 [nucl-th], submitted to Physical Review C.
4. Poincaré Invariant Three-Body Scattering at Intermediate Energies, T. Lin, Ch. Elster, W.N. Polyzou, H. Witala, W. Glöckle, arXiv:0801.3210 [nucl-th], accepted for publication in Physical Review C.
5. Relativistic Effects in Exclusive  $pd$  Breakup Scattering at Intermediate Energies, T. Lin, Ch. Elster, W.N. Polyzou, W. Glöckle, Phys. Lett. **B 660**, 345 (2008).
6. Subtractive renormalization of the NN scattering amplitude in leading order in chiral effective theory, C.-J. Yang, Ch. Elster, D.R. Phillips, Phys. Rev. **C77**, 014002 (2008).
7. First Order Relativistic Three-Body Scattering, T. Lin, Ch. Elster, W. Polyzou, W. Glöckle, Phys. Rev. **C76**, 014010 (2007).
8. Three-Body Elastic and Inelastic Scattering at Intermediate Energies, H. Liu, Ch. Elster, W. Glöckle, Nucl. Phys. **A790**, 262c (2007).
9. Charged and Neutral Pion Production in the S-matrix Approach, V. Malafaia, M.T. Peña, Ch. Elster, J. Adam Jr, Phys. Rev. **C74**, 042201(R) (2006).
10. Near-threshold  $NN \rightarrow d\pi$  reaction in chiral perturbation theory, A. Gardestig, D.R. Phillips, Ch. Elster, Phys. Rev. **C73**, 024002 (2006).
11. Three-Body Scattering at Intermediate Energies, H. Liu, Ch. Elster, W. Glöckle, Phys. Rev. **C72**, 054003 (2005).
12. The Operator form of  ${}^3\text{H}$  ( ${}^3\text{He}$ ) Wave Function and its Spin Structure, I. Fachruddin, W. Glöckle, Ch. Elster, A. Nogga, Phys. Rev. **C69**, 064002 (2004).
13. Model Study of Three-Body Forces in the Three-Body Bound State, H. Liu, Ch. Elster, W. Glöckle, Few-Body Systems **33**, 241 (2003).

14. The Nd Break-Up Process in Leading Order in a Three-Dimensional Approach, I. Fachruddin, Ch. Elster, W. Glöckle, Phys. Rev. **C68**, 054003 (2003).
15.  $\eta N$  Final State Interaction in incoherent Photoproduction of  $\eta$ -mesons from the Deuteron', S. Schneider, A. Sibirtsev, Ch. Elster, J. Haidenbauer, S. Krewald, J. Speth, Eur. Phys. Journal **A 18**, 421, (2003).
16. Lorentz Boosted NN Potentials for Few-Body Systems: Application to the three-nucleon bound state, H. Kamada, W. Glöckle, J. Golak, Ch. Elster, Mod. Phys. Lett. **A18**, 124-127 (2003).
17. The Proton-Deuteron Break-Up Process in a Three-Dimensional Approach, I. Fachruddin, Ch. Elster, W. Glöckle, Mod. Phys. Lett. **A18**, 452-455 (2003).
18. Toy Model for Pion Production in nucleon–nucleon collisions. II. The role of three-particle singularities, A. Motzke, Ch. Elster, C. Hanhart, Phys. Rev. **C66**, 054002 (2002).
19. Lorentz Boosted NN Potential for Few-Body Systems: Application to the three-nucleon bound state, H. Kamada, W. Glöckle, J. Golak, Ch. Elster, Phys. Rev. **C66**, 044010 (2002).
20. Pseudovector vs. pseudoscalar coupling in one-boson exchange NN potentials, G. Caia, J.W. Durso, Ch. Elster, J. Haidenbauer, A. Sibirtsev, J. Speth, Phys. Rev. **C66**, 044006 (2002).
21. Incoherent Eta Photoproduction from the Deuteron near Threshold, A. Sibirtsev, S. Schneider, Ch. Elster, J. Haidenbauer, S. Krewald and J. Speth, Phys. Rev. **C65**, 067002 (2002).
22.  $\eta N$  Final State Interaction in incoherent Photoproduction of  $\eta$ -mesons from the Deuteron near Threshold, A. Sibirtsev, S. Schneider, Ch. Elster, J. Haidenbauer, S. Krewald and J. Speth, Phys. Rev. **C65**, 044007 (2002).
23. Resonance Saturation for four-nucleon operators, E. Epelbaum, U.G. Meissner, W. Glöckle, Ch. Elster, Phys. Rev. **C65**, 044001 (2002).
24. Numerical Implementation of Three-Body Forces into Bound State Faddeev Calculations in Three Dimensions, H. Liu, Ch. Elster, W. Glöckle, Comput. Phys. Commun. **147**, 170 (2002).
25. Nucleon-Nucleon Scattering in a Three-Dimensional Approach, I. Fachruddin, Ch. Elster, W. Glöckle, Nucl. Phys. **A689**, 507c (2001).
26. Incoherent Photoproduction of  $\eta$ -mesons from the Deuteron near Threshold, A. Sibirtsev, Ch. Elster, J. Haidenbauer, J. Speth, Phys. Rev. **C64**, 024006 (2001).

27. New Forms of Deuteron Equations and Wave Functions Representations, I. Fachrudin, Ch. Elster, W. Glöckle, Phys. Rev. C**63**, 054003-1 (2001).
28. Nucleon-Nucleon Scattering in a Three Dimensional Approach, I. Fachrudin, Ch. Elster, W. Glöckle, Phys. Rev. C**62**, 044002-1 (2000).
29. Three-Body Scattering Below Breakup Threshold: An Approach without using Partial Waves, W. Schadow, Ch. Elster, and W. Glöckle, Few-Body Systems **28**, 15 (2000).
30. Sensitivities of the Proton-Neutron Elastic Scattering Observables of  $^6\text{He}$  and  $^8\text{He}$  at Intermediate Energies, S.P. Weppner, O. Garcia, and Ch. Elster, Phys. Rev. C**61**, 044601 (2000).
31. Modern NN Force Predictions for the Total ND Cross Section up to 300 MeV, H. Witała, H. Kamada, A. Nogga, W. Glöckle, Ch. Elster, Hüber, Phys. Rev. C**59**, 3035 (1999).
32. Three Body Bound State Calculations without Angular Momentum Decomposition, Ch. Elster, W. Schadow, A. Nogga, W. Glöckle, Few-Body Systems **27**, 83 (1999).
33. Reply to ‘Comment on ‘Energy Dependence of the NN t-matrix in the Optical Potential for Elastic N-Nucleus Scattering’’, Ch. Elster and S.P. Weppner, Phys. Rev. C**59**, 1816 (1999).
34. Shadowing and Antishadowing Effects in a Model for the n+d Total Cross Section, Ch. Elster, W. Schadow, H. Kamada, W. Glöckle, Phys. Rev. C**58**, 3109 (1998).
35. Inadequacies on the Nonrelativistic 3N Hamiltonian in Describing the n+d Total Cross Section above 100 MeV, W.P. Abfalterer, F.B. Bateman, F.S. Dietrich, Ch. Elster, R.W. Finlay, W. Glöckle, J. Golak, R.C. Haight, D. Hüber, G.L. Morgan, H. Witala, Phys. Rev. Lett. **81**, 57 (1998).
36. Off-Shell Structures of Nucleon-Nucleon t-matrices and their Influence on Nucleon-Nucleus Elastic Scattering Observables, S.P. Weppner, Ch. Elster, D. Hüber, Phys. Rev. C**57**, 1378 (1998).
37. Energy Dependence of the NN t-matrix in the Optical Potential for Elastic Nucleon-Nucleus Scattering, Ch. Elster and S.P. Weppner, Phys. Rev. C**57**, 189 (1998).
38. Two-Body T-Matrices without Angular Momentum Decomposition: Energy and Momentum Dependencies, Ch. Elster, J.H. Thomas, and W. Glöckle, Few-Body Systems **24**, 55 (1998).
39. Full-Folding Optical Potentials for Elastic Nucleon-Nucleus Scattering based on Realistic Densities, Ch. Elster, S.P. Weppner, and C.R. Chinn, Phys. Rev. C**56**, 2080 (1997).

40. Nucleon Scattering from Very Light Nuclei: Intermediate Energy Expansions for Transition Potentials and Breakup Processes, Ch. Elster and W. Glöckle, *Phys. Rev. C* **55**, 1058 (1997).
41. Nonlocality in the Nucleon-Nucleon Force due to Minimal Relativity Factors: Effects on Two-Nucleon Observables and the Three Nucleon Binding Energy, Ch. Elster, E.E. Evans, H. Kamada, and W. Glöckle, *Few-Body Systems* **21**, 25 (1996).
42. Propagator Modifications in Elastic Nucleon-Nucleus Scattering within the Spectator Expansion, C.R. Chinn, Ch. Elster, R.M. Thaler, S.P. Weppner, *Phys. Rev. C* **52**, 1992 (1995).
43. Application of Multiple Scattering Theory to Lower Energy Elastic Nucleon-Nucleus Reactions, C.R. Chinn, Ch. Elster, R.M. Thaler, S.P. Weppner, *Phys. Rev. C* **51**, 1418 (1995).
44. Total Cross Sections for Neutron Scattering, C.R. Chinn, Ch. Elster, R.M. Thaler, S.P. Weppner, *Phys. Rev. C* **51**, 1033 (1995).
45. Microscopic Formulation of Medium Contributions to the First Order Optical Potential, C.R. Chinn, Ch. Elster, R.M. Thaler, *Phys. Rev. C* **48**, 2956 (1993).
46. A Practical Computational Method for Treating Coulomb Scattering in Momentum Space, Ch. Elster, L.C. Liu, R.M. Thaler, *J. Phys. G* **19**, 2123 (1993).
47. Isospin Effects in Elastic Proton-Nucleus Scattering, C.R. Chinn, Ch. Elster, R.M. Thaler, *Phys. Rev. C* **47**, 2242 (1993).
48. Momentum Space Treatment of Coulomb Distortions in a Multiple Scattering Expansion, C.R. Chinn, Ch. Elster, R.M. Thaler, *Phys. Rev. C* **44**, 1569 (1991).
49. Nucleon-Nucleon Interaction at Intermediate Energies and Related Nuclear Processes, Ch. Elster, *Nucl. Phys. A* **508**, 197c (1990).
50. Full Folding Optical Potentials in Elastic Proton-Nucleus Scattering, T. Cheon, Ch. Elster, E. F. Redish, P.C. Tandy, *Phys. Rev. C* **41**, 841 (1990).
51. Effective Mass of the Nucleon at Intermediate Energies, T. Cheon and Ch. Elster, *Prog. Theor. Phys.* **81**, 559 (1989).
52. A Gaussian Parameterization of a Meson-Theoretical N-N Potential for Microscopic Nuclear-Structure Calculations, H. Kellermann, H.M. Hoffmann, *Few-Body Systems* **7**, 31 (1989).
53. Off-Shell Effects from Meson Exchange in the Nuclear Optical Potential, Ch. Elster and P.C. Tandy, *Phys. Rev. C* **40**, 881 (1989).

54. Neutron-proton scattering observables at 325 MeV, the  $\epsilon_1$  parameter, and the tensor force. G. Chulick, Ch. Elster, R. Machleidt, A. Picklesimer and R.M. Thaler, Phys. Rev. **C37**, 1549 (1988).
55. Extension of the Bonn meson exchange NN potential above pion production threshold. II. Role of the Delta Isobar. Ch. Elster, K. Holinde, D. Schütte, and R. Machleidt, Phys. Rev **C38**, 1828 (1988).
56. Extension of the Bonn meson exchange NN potential above pion production threshold. I. Nucleon renormalization and unitarity. Ch. Elster, W. Ferchländer, K. Holinde, D. Schütte, and R. Machleidt, Phys. Rev. **C37**, 1647 (1988).
57. The Bonn Meson Exchange Model for the Nucleon-Nucleon Interaction, R. Machleidt, K. Holinde, Ch. Elster, Physics Reports **149**, 1 (1987).
58. A consistent Meson Exchange Model for the NN-Interaction, Ch. Elster, K. Holinde, R. Machleidt, Acta Physica Austriaca, Supp. XXVII (1985), 597.
59. Nucleon-Antinucleon Interaction; Quark-Gluon versus Meson Exchange, Ch. Elster and K. Holinde, Phys. Lett. **149B**, 293 (1984).
60. NN-Scattering Phase Shifts; Quark-Gluon versus Meson Exchange, Ch. Elster and K. Holinde, Phys. Lett. **136B**, 135 (1984).

**Contributed Papers to Conferences,  
Invited Talks and Oral Presentations at Professional Meetings**

1. Annual Meeting of the Division of Nuclear Physics, October 23-26, 2008, Oakland, CA, ‘Faddeev and Glauber Calculations at Intermediate Energies in a Model for n+d Scattering’, Ch. Elster, T. Lin, W. Glöckle, S. Jeschonnek.
2. Gordon Conference on Photonuclear Reactions, August 10-15, 2008, Tilton School, NH, ‘Poincaré Invariant Three-Nucleon Scattering’, T. Lin, Ch. Elster W. Polyzou, W. Glöckle, H. Witała.
3. 2008 Jefferson Lab Users Group Meeting, June 16-19, 2008, Newport News, VA, ‘Relativity and Three-Body Systems, Inv. Talk, Ch. Elster
4. Annual Meeting of the Division of Nuclear Physics, October 25-28, 2007, Newport News, VA, ‘Poincaré Invariant Three-Body Scattering’, T. Lin, Ch. Elster, W. Polyzou, W. Glöckle.

5. 20th Midwest Nuclear Theory Get-Together, Oct. 5-6, 2007, Argonne, IL, 'Poincaré Invariant Three-Body Scattering', T. Lin, Ch. Elster, W. Polyzou, W. Glöckle.
6. 20th European Conference on Few-Body Problems in Physics, September 10-14, 2007, Pisa, Italy, Three Body Scattering in 'Poincaré Invariant Quantum Mechanics', W. Polyzou, T. Lin, Ch. Elster, W. Glöckle, *nucl-th/0711.1635*.
7. Gordon Conference on Nuclear Physics, July 15-20, 2007, Salve Regina University, Newport, RI, 'Relativistic Three-Body Scattering', Ch. Elster, T. Lin, W. Polyzou, W. Glöckle.
8. International Nuclear Physics Conference INPC2007, June 3-8, 2007, Tokyo, Japan, 'Relativistic Three-Body Scattering in First Order Faddeev Formulation', Ch. Elster, T. Lin, W. Polyzou, W. Glöckle.
9. International Mini-Workshop on "Nuclear Reactions from Few to Many Body Systems", June 2, 2007, U. Tokyo, 'First Order Poincaré-Invariant Faddeev Calculations', Inv. Talk, Ch. Elster.
10. INT Program 07-1, Fundamental Neutron Physics, March 19 - June 8, 2007, Seattle, WA, 'First Order Relativistic Three-Body Scattering', Inv. Talk, Ch. Elster, T. Lin, W. Polyzou, W. Glöckle.
11. Annual Meeting of the Division of Nuclear Physics, October 25-28, 2006, Nashville, TN, 'Relativistic Effects in First Order Three-Body Calculations', T. Lin, Ch. Elster, W. Polyzou, W. Glöckle.
12. 18th International IUPAP Conference on Few-Body Problems in Physics, Santos, Brazil, Aug. 21-26, 2006, 'Three-Body Elastic and Inelastic Scattering at Intermediate Energies', H. Liu, Ch. Elster, W. Glöckle.
13. American Physical Society Meeting, April 2006, Dallas TX, 'Influence of the  $N^*1440$  and  $N^*1535$  Resonances in Intermediate Energy pp and np Scattering', Ch. Elster, A. Pricking, A. Gardestig, and the EDDA Collaboration.
14. 3rd Asia-Pacific Conference on Few-Body Problems in Physics, July 26-30, 2005, Nakhon Ratchasima, Thailand, 'Three-Nucleon Scattering at Intermediate Energies', I. Fachruddin, Ch. Elster, W. Glöckle, *nucl-th/0708.135*.
15. 2004 Fall Meeting of the Division of Nuclear Physics, October 28-30, Chicago IL, 'Three-Body Scattering without Partial Waves', Ch. Elster, H. Liu, W. Glöckle.
16. 2004 Fall Meeting of the Division of Nuclear Physics, October 28-30, Chicago IL, 'Three-Body Break-Up Processes at Higher Energies', H. Liu, Ch. Elster, W. Glöckle.

17. 19<sup>th</sup> European Conference on Few-Body Problems in Physics, August 23-27, 2004, Groningen NL, ‘Three-Body Scattering without Partial Waves’, Ch. Elster, H. Liu, W. Glöckle, AIP Conference Proceedings Vol. 768, Edts N. Kalantar-Nayestanak, R.G.E. Timmermans, B.L.G. Bakker, New York 2005, p. 430.
18. American Physical Society, Ohio Section, April 2004, ‘Three-Body Scattering without Partial Waves’, H. Liu, Ch. Elster, W. Glöckle.
19. American Physical Society, Ohio Section, April 2004, ‘A complex energy method for two-body scattering’, T. Lin, Ch. Elster.
20. INT Program 03-3, Theories of Nuclear Forces and Nuclear Systems, September 29 - December 5, 2003, Seattle, WA, Inv. Talk, ‘Towards 3N Calculations at Higher Energies’, Ch. Elster.
21. 2003 Fall Meeting of the Division of Nuclear Physics, October 30 - November 1, 2003, Tucson, AZ, ‘The Nd Break-Up Process in Leading Order in a Three-Dimensional Approach’, Ch. Elster, I. Fachruddin, W. Glöckle, *Bull. Amer. Phys. Soc.* **48**, 26 (2003).
22. 16th Midwest Nuclear Theory Get-Together, Oct. 10-11, 2003, Argonne, IL, ‘The Nd Break-Up Process in Leading Order in a Three-Dimensional Approach - Application to the (p,n) Charge Exchange Reaction’, Ch. Elster, I. Fachruddin, W. Glöckle.
23. X. International Conference on Hadron Spectroscopy, August 31 - September 6, 2003, Aschaffenburg, Germany, ‘Photoproduction of  $\eta'$ -mesons from the Proton’, Ch. Elster, A. Sibirtsev, S. Krewald, J. Speth. *Hadron Spectroscopy*, Edts. E. Klempt, H. Koch, H. Orth, AIP Conference Proceedings **717**, AIP, Melville, NY, 2004, p. 837
24. Workshop on Hadron Physics at COSY, July 7-10, 2003, Bad Honnef, Germany, Inv. Talk, ‘Question and Problems in Few-Body Reactions’, Ch. Elster, I. Fachruddin, W. Glöckle
25. 17th International IUPAP Conference on Few-Body Problems in Physics, June 5-11, 2003, Durham, NC, ‘Photoproduction of  $\eta'$  Mesons from the Proton’, Ch. Elster, A. Sibirtsev, S. Krewald, J. Speth, *Few Body Problems in Physics*, Edited by W. Glöckle and W. Tornow, 2004 Elsevier, NL, p. S161.
26. 17th International IUPAP Conference on Few-Body Problems in Physics, June 5-11, 2003, Durham, NC, ‘Effect of a Lorentz Boosted Potential in the Three-Nucleon Bound State’, H. Kamada, W. Glöckle, J. Golak, Ch. Elster, *Few Body Problems in Physics*, Edited by W. Glöckle and W. Tornow, 2004 Elsevier, NL, p. S263.

27. 15th Midwest Nuclear Theory Get-Together, Oct. 25-25, 2002, Argonne National Laboratory, ‘Lorentz Boosted NN Potentials for Few-Body Systems’, Ch. Elster, H. Kamada, W. Glöckle, J. Golak.
28. 16th Particles and Nuclei International Conference PANIC, Sept. 30 - Oct. 4, 2002, Osaka, Japan, ‘Incoherent Photoproduction of  $\eta$ -mesons from the Deuteron near Threshold’, J. Haidenbauer, A. Sibirtsev, S. Schneider, S. Krewald, J. Speth.
29. Second Asia Pacific Conference on Few-Body Problems in Physics, August 27-30, 2002, Shanghai, China, ‘Lorentz Boosted NN Potentials for Few-Body Systems: Application to the three-nucleon bound state’, H. Kamada, W. Glöckle, J. Golak, Ch. Elster, *Mod. Phys. Lett.* **A18**, 124-127 (2003).
30. Second Asia Pacific Conference on Few-Body Problems in Physics, August 27-30, 2002, Shanghai, China, ‘The Proton-Deuteron Break-Up Process in a Three-Dimensional Approach’, I. Fachruddin, Ch. Elster, W. Glöckle, *nucl-th/0211069*, *Mod. Phys. Lett.* **A18**, 452-455 (2003).
31. QNP2002, International Conference on Quark Nuclear Physics, June 9-14, 2002, Jülich, Germany; ‘ $\eta N$  Final State Interaction in incoherent Photoproduction of  $\eta$ -mesons from the Deuteron near Threshold’, S. Schneider, A. Sibirtsev, Ch. Elster, J. Haidenbauer, S. Krewald, J. Speth.
32. Mesons 2002, 7th International Workshop on Meson Production, Properties and Interaction, May 24-28 2002, Krakow, Poland; Inv. Talk, ‘Photoproduction of the  $\eta$  Meson from the Deuteron Near Threshold’, Ch. Elster, A. Sibirtsev, S. Schneider, J. Haidenbauer, S. Krewald, J. Speth, published in ‘Mesons 2002: Production, Properties and Interactions of Mesons’, Eds. L. Jarczyk, A. Magiera, C. Guaraldo, H. Machner, World Scientific Publishing Co. 2003, p. 245-256.
33. American Physics Society Meeting, April 2002, Albuquerque, NM; ‘Three Body Bound State Calculations with Two and Three Body Forces without Partial Wave Decomposition, H. Liu, Ch. Elster, W. Glöckle *Bull. Amer. Phys. Soc.* **47**, 165 (2002).
34. 19. Cooler Synchrotron (COSY) Workshop, Bad Honnef, Germany, December 2001, Inv. Talk, ‘Incoherent Photoproduction of  $\eta$ -Mesons from the Deuteron near Threshold’, Ch. Elster
35. 14th Midwest Nuclear Theory Get-Together, Argonne National Laboratory, October 2001, ‘Incoherent Photoproduction of  $\eta$  mesons from Deuterium near Threshold’, Ch. Elster
36. Conference on ‘Mesons and Light Nuclei’, Prague, July 2001; ‘Chiral Dynamics in Few-Nucleon Systems’, E. Epelbaum, U.G. Meißner, W. Glöckle, Ch. Elster,

- H. Kamada, A. Nogga, H. Witala; published in: *Mesons and Light Nuclei: 8th Conference*, edited by J. Adam, P. Bydzovsky, J. Mares, AIP Conf. Proc. No. 603, p.17 (AIP, Melville, NY, 2001).
37. Europhysics Conference on Computational Physics, Sept. 5-8, 2001, Aachen, Germany; ‘Three Body Bound State Calculations with Three Body Forces without Angular Momentum Decomposition’, Ch. Elster, H. Liu, W. Glöckle, *Book of Abstracts*, NIC Series Vol. 8, F. Hossfeld, K. Binder (Edts), p. A22.
  38. American Physics Society Meeting, April 2001, Washington DC; ‘Three Dimensional Calculations of the NN System’, Ch. Elster, I. Fachruddin, W. Glöckle, *Bulletin J15.013*.
  39. International Symposium on Nuclear Physics, Bhabha Atomic Research Centre, Tombay, Mumbai, Dec. 18-22, 2000, India; Inv. Talk ‘NN Systems in Three Dimensions’, Ch. Elster
  40. Workshop on Computational Methods for Few-Body Dynamical Systems, NIST Gaithersburg, MD, Nov. 15-17, 2000; Inv. Talk ‘Faddeev Calculations in Nuclear Physics’, Ch. Elster
  41. XVII European Conference on Few-Body Problems in Physics, 11-16 Sept. 2000, Evora, Portugal, ‘Nucleon-Nucleon Scattering in a Three-Dimensional Approach’, I. Fachruddin, Ch. Elster, W. Glöckle.
  42. 2000 Meeting of the Scientific Advisory Council of the Institute of Nuclear Physics and COSY, May 8-9, 2000, Forschungszentrum Jülich, Inv. Talk ‘Report on Workshop on Physics at the Spectrometer Big Karl at COSY.’, Ch. Elster
  43. 20th COSY-PAC Meeting, May 5-6, 2000, Forschungszentrum Jülich, Inv. Talk ‘Physics at the Spectrometer Big Karl at COSY’, Ch. Elster
  44. 64. Physikertagung of the German Physical Society (DPG), March 20-24, 2000, Dresden, ‘Few-Body Calculations - An Approach without Partial Waves.’ Ch. Elster, W. Schadow, W. Glöckle, *Verhandl. DPG(VI)* 35, 208 (2000).
  45. Workshop ‘Towards a Solution for  ${}^4\text{He}$ ’, Graduiertenkolleg Erlangen-Regensburg, January 19, 2000, Erlangen, Inv. Talk ‘Faddeev Calculations without Partial Wave Decomposition’, Ch. Elster
  46. COSY-Arbeitsgemeinschaft Nordrhein-Westfälischer Universitäten (CANU) Workshop, December 20-21, 1999, Bad Honnef, Inv. Talk, ‘Dreikörper-Rechnungen ohne Partialwellenzerlegung’, Ch. Elster

47. Supercomputing 1999, November 13-19, 1999, Portland, code calculating a three-boson bound state (authors Schadow, Elster) showcased for performance on a SGI Pentium III Xeon Linux cluster by the Ohio Supercomputer Center (OSC).
48. Gordon Research Conference on ‘Dynamics of Simple Systems in Chemistry and Physics’, July 11-16, 1999, Newport, RI, Inv. Talk, ‘Three Body States: An Approach Without Partial Waves’. Ch. Elster
49. Workshop on ‘The Nuclear Interaction: Modern Developments’, Trento, IT, 6/28 - 7/8 1999, Inv.Talk, ‘Few Body Calculations: An Approach without Partial Waves’. Ch. Elster
50. Symposium on Current Topics in the Field of Light Nuclei, Kracow, PL, June 21-25, 1999, Inv.Talk, ‘Three Body States: an Approach Without Angular Momentum Decomposition.’ Ch. Elster
51. American Physical Society meeting, April 1999, ‘Three-Body Scattering Calculations without Partial Wave Decomposition.’ W. Schadow, Ch. Elster, W. Glöckle, Atlanta, [www.aps.org/meet/CENT99/BAPS/abs/S5405004.html](http://www.aps.org/meet/CENT99/BAPS/abs/S5405004.html)
52. American Physical Society meeting, April 1998, ‘Three Nucleon Bound States Calculated without Partial Wave Decomposition.’ W. Schadow, Ch. Elster, A. Nogga, W. Glöckle, *Bull. Amer. Phys. Soc.* **43**, 1075 (1998).
53. American Physical Society meeting, April 1998, ‘Total cross sections for neutron scattering from few nucleon systems. I. Measurements.’, W.P. Abfalterer, F.B. Bateman, F.S. Dietrich, Ch. Elster, R.W. Finlay, W. Glöckle, J. Golak, R.C. Haight, D. Hüber, G.L. Morgan, H. Witala, *Bull. Amer. Phys. Soc.* **43**, 1075 (1998).
54. American Physical Society meeting, April 1998, ‘Total cross sections for neutron scattering from few nucleon systems. II. Theoretical Considerations.’ Ch. Elster, W.P. Abfalterer, F.B. Bateman, F.S. Dietrich, R.W. Finlay, W. Glöckle, J. Golak, R.C. Haight, D. Hüber, G.L. Morgan, H. Witala, *Bull. Amer. Phys. Soc.* **43**, 1075 (1998).
55. American Physical Society meeting, April 1998, ‘Sensitivity of Nucleon-Nucleus Scattering Observables to the Energy Dependence of realistic NN t-matrices.’ S.P. Weppner, Ch. Elster, *Bull. Amer. Phys. Soc.* **43**, 1178 (1998).
56. National Institute for Nuclear Theory, Seattle, Program on ‘Numerical Methods for Strongly Interacting Quantum Systems’, November 1997; Inv. Talk ‘Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.’
57. Supercomputing 1997, San Jose, CA, ‘Two-Body Transition Amplitudes without Angular Momentum Decomposition’, contributed animation, J.H. Thomas and Ch. Elster, [http://www.osc.edu/research/SC97/Elster\\_SC97.html](http://www.osc.edu/research/SC97/Elster_SC97.html).

58. 15th Int. Conf. on Few Body Problems in Physics, Groningen, NL, July 1997: 'Two-Body T-matrices for Local Potentials in Three Dimensions: Energy and Momentum Dependencies.' Ch. Elster, J.H. Thomas, X.D. Zhang, W. Glöckle.
59. American Physical Society meeting, April 1997, 'Sensitivity of Nucleon-Nucleus Scattering Observables to the Off-Shell Behavior of Realistic NN Potentials.' S.P. Weppner, Ch. Elster, *Bull. Amer. Phys. Soc.* **42**, 925 (1997).
60. 'Parallel Computing: The T3D and Beyond', Conference sponsored by the Pittsburgh Supercomputing Center, Arctic Region Supercomputing Center, Ohio Supercomputer Center, Columbus, April 2-3, 1997, Inv. Talk 'Nuclear Scattering Calculations on the T3D', with S.P. Weppner
61. Specialists' Meeting on the Nucleon-Nucleus Optical Model up to 200 MeV, Bruyeres-le-Chatel, France, 13.-15. November 1996, Inv. Talk, 'Microscopic Optical Potentials for Elastic Nucleon-Nucleus Scattering', Ch. Elster, <http://db.nea.fr/science/om200>
62. American Physical Society, Ohio Section, November 1996, 'Sensitivity of Nucleon-Nucleus Scattering Observables to the Off-Shell Behavior of realistic NN Potentials.' S.P. Weppner, Ch. Elster.
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73. American Physical Society meeting, Division of Nuclear Physics, October 1994, 'Low Energy Behavior of Energy Dependent One-Boson-Exchange Nucleon-Nucleon Interactions, Ch. Elster and L. Wang, *Bull. Amer. Phys. Soc.* **39**, 1425 (1994).
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82. Physics Computing 1993, May 31 - June 4, 1993, 'Scattering in Three Dimensions', R.A. Rice and Ch. Elster, *Bull. Amer. Phys. Soc.* **38**, 1449 (1993).
83. American Physical Society meeting, April 1993, 'Medium Corrections within a Multiple Scattering Theory.', C.R. Chinn, Ch. Elster, R.M. Thaler, *Bull. Amer. Phys. Soc.* **38**, 1052 (1993).
84. American Physical Society meeting, April 1993, 'Backward angle n-p differential cross sections for  $65 \leq E_n \leq 250$  MeV' A. E. Feldman, J. Rapaport, B. Barmore, F. P. Brady, Ch. Elster, G. Fink, C. R. Howell, A. Ling , B.K. Park, J.L. Romero, D. Sorenson, W. Tornow, J. L. Ullmann, X. Yang, *Bull. Amer. Phys. Soc.* **38**, 1062 (1993).
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87. 'Present Status of Proton-Nucleus Scattering. Future Questions.' Inv.Talk at the Proton-Nucleus Mini Workshop, Los Alamos, NM, July 8-12, 1991.
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90. American Physical Society meeting, April 1990, 'Ambiguities of Full-folding Optical Potentials in Elastic Proton Nucleus Scattering '.
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92. 'Nucleon-Nucleon Interaction at Intermediate Energies and Related Nuclear Processes', Inv.Talk at the 12th International Conference Few Body Problems in Physics, Vancouver, B.C. Canada, July 2-8, 1989.
93. American Physical Society meeting, May 1989, 'Calculation of Full Folding Optical Potentials and their Application in Elastic Proton-Nucleus Scattering', Ch. Elster, E. F. Redish and P. C. Tandy.
94. 'Meson Exchange Interactions and Off-Shell Effects in Proton-Nucleus Elastic Scattering', Ch. Elster, P.C. Tandy, Inv.Talk, Proceedings of the workshop 'Relativistic Nuclear Many-Body Physics', held at the Ohio State University June 6-9, 1988, Editors, B.C. Clark, R.J. Perry and J.P. Vary, World Scientific Publishing Co., 1989, p. 512.
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96. American Physical Society meeting, April 1988, 'Nucleon-Nucleon Off-Shell Scattering Amplitudes from Various Potential Models', Ch. Elster, P. C. Tandy, E. F. Redish, and M. H. MacFarlane.
97. American Physical Society meeting, April 1988, 'The Off-Shell Behavior of the Bonn Potential and its approximations', with E.F. Redish, Ch. Elster, and K.L. Warman.
98. American Physical Society meeting, March 1987, 'The Bonn Meson Exchange Potential above Pion Production Threshold', Ch. Elster, K. Holinde, D. Schütte and R. Machleidt.
99. 'Extension of the Bonn Meson Exchange NN-Potential above the Pion Production Threshold', Ch. Elster, K. Holinde, D. D. Schütte, R. Machleidt, Eleventh International IUPAP Conference on Few Body Systems in Particle and Nuclear Physics, Book of Contributions, Edited by T. Sasakawa, K. Nisimura, S. Oryu, S. Ishikawa, Tohoko Univ., Vol 19 (1986), p. 308.
100. German Physical Society (DPG) meeting, Heidelberg (W.-Germany), March 1986, 'NN Scattering up to 1 GeV and Nucleon Renormalization', Ch. Elster, W. Ferchländer, K. Holinde and D. Schütte.
101. XXIV Int. Winterschool for Nucl. Physics, Schladming (Austria), Febr. 1985, Inv.Talk, 'A Consistent Meson Exchange Model for the NN Interaction'.
102. 'NN-Observables derived from the Bonn-Potential', C. Hamburger, Ch. Elster, K. Holinde, R. Machleidt, PANIC Particles and Nuclei Tenth International Conference, Book of Abstracts, Vol. I, C28, Heidelberg (1984).

103. 'Quark Gluon versus Meson Exchange II: NN-Interaction', Ch. Elster and K. Holinde, PANIC Particles and Nuclei Tenth International Conference, Book of Abstracts, Vol. I, B35, Heidelberg (1984).
104. 'Quark Gluon versus Meson Exchange I: NN-Interaction', Ch. Elster and K. Holinde, PANIC Particles and Nuclei Tenth International Conference, Book of Abstracts, Vol. I, B34, Heidelberg (1984).
105. German Physical Society (DPG) meeting, Innsbruck (Austria), March 1984 'Extended Meson Exchange Model for the NN Interaction', Ch. Elster, K. Holinde, R. Machleidt.

## Colloquia and Seminars

RIKEN Nishina Center, RIKEN, Japan, July 2008:

‘Challenges for the Nucleon-Nucleon Force in the Second Resonance Region’

Hosei University, Tokyo, Japan, July 2008:

‘Challenges for the Nucleon-Nucleon Force in the Second Resonance Region’

Kochi University, Kochi, Japan, July 2008:

‘Challenges in Few Nucleon Physics’

RIKEN Nishina Center, RIKEN, Japan, July 2008:

‘Faddeev and Glauber Calculations for n+d Scattering at Intermediate Energies’

Center for Nuclear Science, U. Tokyo, Japan, June 2008:

‘Poincaré Invariant Three-Body Scattering at Intermediate Energies’

RIKEN Nishina Center, RIKEN, Japan, June 2008:

‘Poincaré Invariant Three-Body Scattering’

Centro de Física Nuclear, University of Lisbon, Portugal, May 2008:

‘Faddeev and Glauber Calculations for n+d Scattering at Intermediate Energies’

Centro de Física das Interações Fundamentais, University Lisbon, Portugal, April 2008:

‘Poincaré Invariant Three-Body Scattering’

The Ohio-State University, Columbus, OH, March 2008: ‘Poincaré Invariant Three-Body Scattering at Intermediate Energies’

University of Iowa, Iowa City, IA, November 2007: ‘Poincaré Invariant Three-Body Scattering at Intermediate Energies’

Argonne National Laboratory (ANL), Argonne, IL, November 2007: ‘Poincaré Invariant Three-Body Scattering’

Institute of High Energy Physics (IHEP), Beijing, China, September 2007: ‘Challenges for the Nucleon-Nucleon Force in the Second Resonance Region’

Institute of Theoretical Physics, Shanghai Jiao Tong University, Shanghai, China, September 2007: ‘Poincaré Invariant Three-Body Scattering at Intermediate Energies’

Institute of Modern Physics (IMP), Chinese Academy of Science, Lanzhou, China, September 2007: ‘Poincaré Invariant Three-Body Scattering at Intermediate Energies’

Institute of Modern Physics (IMP), Chinese Academy of Science, Lanzhou, China, September 2007: ‘Questions and Challenges in Few-Body Reactions’

Institute of Modern Physics (IMP), Chinese Academy of Science, Lanzhou, China, Septem-

ber 2007: ‘Nucleon-Nucleon Forces above Pion Production Threshold’

The Ohio State University, Columbus, OH, June 2007:

‘First Order Relativistic Three-Body Scattering’

Jefferson National Laboratory, Newport News, VA, January 2007:

‘Relativistic Effects in Three-Body Scattering’

Argonne National Laboratory, Argonne, IL, November 2006:

‘Three-Body Scattering at Intermediate Energies: Relativistic Effects’

University Fluminense, Niteroi, Brazil, August 2006:

‘Three-Body Scattering at Intermediate Energies’

National Superconducting Cyclotron Laboratory, MSU, East Lansing MI, February 2006:

‘The Nuclear Force above Pion Threshold’

University of Kentucky, Lexington KY, April 2005:

‘Three-Body Scattering at Intermediate Energies’

Centro de Física das Interações Fundamentais, University Lisbon, March 2005:

‘Three-Body Scattering at Intermediate Energies’

The Ohio State University, Columbus OH, February 2005:

‘Three-Body Scattering at Intermediate Energies’

Argonne National Laboratory, Argonne IL, January 2005:

‘Three-Body Scattering at Intermediate Energies’

George Washington University, Washington DC, December 2004:

‘Towards Three-Body Scattering at Intermediate Energies’

Kenyon College, Gambier OH, October 2004:

‘What do we know about the Strong Force?’

Jefferson National Laboratory, Newport News VA, March 2004:

‘Towards Three Nucleon Calculations at Higher Energies.’

University of Iowa, Iowa City IA, February 2004:

‘Towards Three Nucleon Calculations at Higher Energies.’

University of Georgia, Athens GA, January 2004:

‘The  $\eta$ -Nucleon System as Observed in Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.’

University of Basel, Basel, Switzerland, June 2002:

‘Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.’

University of Mainz, Mainz, Germany, June 2002:  
'Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.'

Kent State University, Kent, OH, February 2002:  
'Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.'

Ohio University, Athens, OH, November 2001:  
'The  $\eta$ -Nucleon System as Observed in Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.'

The Ohio State University, Columbus, OH, October 2001:  
'The  $\eta$ -Nucleon System as Observed in Incoherent Photoproduction of  $\eta$ -Mesons from Deuterium near Threshold.'

Gesellschaft für Schwerionenforschung (GSI), Darmstadt, June 2000:  
'Towards Faddeev Calculations at Intermediate Energies.'

Institut for Theoretical Nuclear Physics, University Bonn, February 2000:  
'Faddeev Calculations without Partial Wave Decomposition at Higher Energies.'

Centro de Física das Interações Fundamentais, University Lisbon, January 2000:  
'Faddeev Calculations without Partial Wave Decomposition.'

Ohio Wesleyan University, Science Lecture Series, October 1998:  
'What do we know about the Nuclear Force?'

Physics Division, Livermore National Laboratory, May 1998:  
'Three Nucleons: Physical Insights and Computational Challenges'

Dept. of Physics, Kent State University, November 1997:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Indiana University Cyclotron Facility, IUCF, July 1997:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics, Univ. of Kentucky, October 1996:  
'Meson Exchange Potentials for the Nucleon-Nucleon Interaction:  
Success and Difficulties.'

Dept. of Physics, Univ. of Notre Dame, January 1996:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics, Ohio University, November 1995:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics, The Ohio State University, January 1995:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics, Ruhr-University Bochum, Germany, December 1994:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics and Astronomy, Bowling Green State University, November 1994:  
'Application of Multiple Scattering Theory to Elastic Nucleon-Nucleus Scattering.'

Dept. of Physics and Astronomy, Ohio University, November 1994:  
'Visualization of NN Scattering Amplitudes.'

Nuclear Theory Division, KFA-Jülich (Germany), December 1993:  
'n-p Differential Cross Section at Backward Angles and the  $\pi$ NN Coupling Constant.'

Inst. of Theoretical Nuclear Physics, University of Bonn (Germany), December 1993:  
'Microscopic Description of Elastic Nucleon-Nucleus Scattering'

Dept. of Physics, Indiana University, October 1993:  
'Microscopic Formulation of Medium Contributions to the First Order Optical Potential'

Dept. of Physics and Astronomy, Ohio University, September 1993:  
'Microscopic Formulation of Medium Contributions to the First Order Optical Potential'

Nuclear Theory Group, Oak Ridge National Laboratory, August 1993: 'n-p Differential Cross Sections at Backward Angles and the  $\pi$ NN Coupling Constant.'

Ohio University, Dept. of Physics, Eisenhower Project, June 1992:  
'High Performance Supercomputing'

Dept. of Physics and Astronomy, Ohio University, March 1992:  
'Dibaryons - Myth and Reality.'

Triangle University National Laboratory, TUNL, February 1992:  
'Is Elastic Nucleon Nucleus Scattering a solved Problem?'

Dept. of Physics and Astronomy, Ohio University, November 1991:  
'What you always wanted to know about the Bonn Potential and were afraid to ask.'

Institute for Nuclear Theory, Univ. of Washington, November 1991:  
'Proton Nucleus Interactions in a Multiple Scattering Expansion.'

Dept. of Physics, Univ. of Pittsburg, October 1991:  
'First Order Optical Potentials in Elastic Proton Nucleus Scattering.'

Dept. of Physics and Astronomy, Ohio University, June 1990:  
'Modern Meson-Exchange Interactions and Proton-Nucleus Scattering at Intermediate Energies.'

Dept. of Physics, Bryn Mawr College, Feb. 1990:

‘The Nuclear Structure as revealed by Proton-Nucleus Scattering’

Theory Division, Los Alamos National Laboratory, September 1989:  
‘Implications of Modern Meson-Exchange NN Interactions in  
Medium-Energy Nuclear Physics.’

Nuclear Theory Group, TRIUMF, Vancouver (Canada), Feb. 1988:  
‘NN Scattering at intermediate energies’.

Dept. of Physics, The Ohio State University, Febr. 1988:  
‘The Bonn Potential. A survey and recent investigations.’

Dept. of Physics, Univ. of Erlangen-Nürnberg (W-Germany), Jan. 1988:  
‘A field-theoretical Model for Pion Nucleon Scattering.’

Nuclear Theory Division, KFA - Jülich (W-Germany), Jan. 1988:  
‘Low Energy Pion Nucleon Scattering’.

Theory Division, Los Alamos National Laboratory, June 1987:  
‘The Bonn Potential above Pion Production Threshold and its  
relation to Pion-Nucleon scattering’.

Dept. of Physics and Astronomy, Univ. of Maryland, Feb. 1987:  
‘The Bonn Meson Exchange Potentials above Pion Production Threshold,  
Renormalization and Unitarity’.

Physics Division, Argonne Nat. Laboratory, Nov. 1986:  
‘NN Scattering at intermediate energies - the Bonn approach’.

Dept. of Physics, Kent State University, Sept. 1986:  
‘Nucleon-Nucleon Scattering above Pion Production Threshold’.

Dept. of Physics, Univ. of Erlangen-Nürnberg (W-Germany), July 1984:  
‘Resonance Structures in NN Scattering up to 1 GeV’.

Inst. of Theoret. Nucl. Physics, Univ. of Bonn (W-Germany), July 1986:  
‘Extension of the Bonn Meson Exchange Potential above Pion Production  
Threshold’.

Dept. of Astronomy, Univ. of Bonn (W-Germany), Nov. 1985:  
‘The Dynamo Earth’.

Atomist. Institute, Univ. of Vienna (Austria), May 1985:  
‘A consistent Meson Exchange Model for the NN Interaction’.

Dept. of Physics, Univ. of Graz (Austria), May 1985:  
‘The Bonn Meson Exchange Model for the NN Interaction’.

Inst. of Theoret. Nucl. Physics, Univ. of Bonn (W-Germany), Dec. 1984:  
'The effect of various approximations in the  $N\Delta$  Interaction  
on the description of low energy NN scattering data'.

Dept. of Physics, Univ. of Erlangen-Nürnberg (W-Germany), Oct. 1984:  
'The Role of the Delta-Isobar in the NN Interaction'.

Inst. of Theoret. Nucl. Physics, Univ. of Bonn (W-Germany), Dec. 1983:  
'The NN-Potential concept derived from field theory'.

Inst. of Theoret. Nucl. Physics, Univ. of Bonn (W-Germany), May 1983:  
'One Boson Exchange Potentials in Coordinate Space'.