

## Publications

January 30, 2008

### A. Original research papers:

1. A. Csótó, B. Gyarmati, A. T. Kruppa, K. F. Pál, and N. Moiseyev, Back-rotation of the wave function in the complex scaling method, *Phys. Rev. A* **41**, 3469 (1990)
2. A. Csótó, B. Gyarmati, and A. T. Kruppa, Spurious resonances in a version of the algebraic resonating-group method, *Few-Body Systems* **11**, 149 (1991)
3. A. Csótó and R. G. Lovas, Dynamical microscopic three-cluster description of  ${}^6\text{Li}$ , *Phys. Rev. C* **46**, 576 (1992)
4. A. Csótó, R. G. Lovas, and A. T. Kruppa, Two-pole structure of the  $3/2^+$  resonance of  ${}^5\text{He}$  in a dynamical microscopic model, *Phys. Rev. Lett.* **70**, 1389 (1993)
5. A. Csótó, Neutron halo of  ${}^6\text{He}$  in a microscopic model, *Phys. Rev. C* **48**, 165 (1993)
6. A. Csótó, Proton skin of  ${}^8\text{B}$  in a microscopic model, *Phys. Lett. B* **315**, 24 (1993)
7. A. Csótó, Localization of shadow poles by complex scaling, *Phys. Rev. A* **48**, 3390 (1993)
8. A. Csótó and D. Baye, Microscopic description of the beta delayed deuteron emission from  ${}^6\text{He}$ , *Phys. Rev. C* **49**, 818 (1994)
9. A. Csótó, Three-body resonances by complex scaling, *Phys. Rev. C* **49**, 2244 (1994)
10. A. Csótó, Three-body resonances in  ${}^6\text{He}$ ,  ${}^6\text{Li}$ , and  ${}^6\text{Be}$ , and the soft dipole mode problem of neutron halo nuclei, *Phys. Rev. C* **49**, 3035 (1994)

11. S. G. Cooper, R. S. Mackintosh, A. Csótó, and R. G. Lovas, Local  $^4\text{He}$ - $p$  potentials from resonating-group method phase shifts, Phys. Rev. **C50**, 1308 (1994)
12. A. Csótó, K. Langanke, S. E. Koonin, and T. D. Shoppa,  $^7\text{Be}(p, \gamma)^8\text{B}$  cross section and the properties of  $^7\text{Be}$ , Phys. Rev. **C52**, 1130 (1995)
13. A. Csótó, Reply to “Comment on ‘Three-body resonances of  $^6\text{He}$ ,  $^6\text{Li}$ , and  $^6\text{Be}$ , and the soft dipole mode problem of neutron halo nuclei’ ”, Phys. Rev. **C52**, 2809 (1995)
14. B. A. Brown, A. Csótó, and R. Sherr, Coulomb displacement energy and the low-energy astrophysical  $S_{17}$  factor for the  $^7\text{Be}(p, \gamma)^8\text{B}$  reaction, Nucl. Phys. **A597**, 66 (1996)
15. A. Csótó and R. G. Lovas, Comment on “Large-space shell-model calculations for light nuclei”, Phys. Rev. **C53**, 1444 (1996)
16. A. Csótó, H. Oberhummer, and R. Pichler, Searching for three-nucleon resonances, Phys. Rev. **C53**, 1589 (1996)
17. A. Csótó and K. Langanke, Parity-violating  $\alpha$ -decay of the 3.56-MeV  $J^\pi, T=0^+, 1$  state of  $^6\text{Li}$ , Nucl. Phys. **A601**, 131 (1996)
18. A. Csótó and S. Karataglidis, Low-energy  $M1$  strength in the  $^7\text{Li}(p, \gamma_0)^8\text{Be}$  reaction, Nucl. Phys. **A607**, 62 (1996)
19. A. Csótó and G. M. Hale,  $S$ -matrix and  $R$ -matrix determination of the low-energy  $^5\text{He}$  and  $^5\text{Li}$  resonance parameters, Phys. Rev. **C55**, 536 (1997)
20. A. Csótó, Off-shell effects in the energy dependence of the  $^7\text{Be}(p, \gamma)^8\text{B}$  astrophysical  $S$  factor, Phys. Lett. **B394**, 247 (1997)
21. A. Csótó and G. M. Hale, Nature of the first excited state of  $^4\text{He}$ , Phys. Rev. **C55**, 2366 (1997)
22. R. Pichler, H. Oberhummer, A. Csótó, and S. A. Moszkowski, Three-alpha structures in  $^{12}\text{C}$ , Nucl. Phys. **A618**, 55 (1997)

23. A. Csótó, B. F. Gibson, and G. L. Payne, Parity conserving  $\gamma$  asymmetry in n-p radiative capture, Phys Rev. **C56**, 631 (1997)
24. A. Csótó and K. Langanke, Effects of  ${}^8\text{B}$  size on the low-energy  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  cross section, Nucl. Phys. **A636**, 240 (1998)
25. J. Humblet, A. Csótó, and K. Langanke,  $R$ -matrix and  $K$ -matrix analysis of elastic  $\alpha - \alpha$  scattering, Nucl. Phys. **A638**, 714 (1998)
26. A. Csótó and K. Langanke, Large-space cluster model calculations for the  ${}^3\text{He}({}^3\text{He}, 2p){}^4\text{He}$  and  ${}^3\text{H}({}^3\text{H}, 2n){}^4\text{He}$  reactions, Nucl. Phys. **A646**, 387 (1999)
27. A. Csótó and G. M. Hale, Search for excited states in  ${}^3\text{H}$  and  ${}^3\text{He}$ , Phys. Rev. **C59**, 1207 (1999) [Erratum: Phys. Rev. **C62**, 049901 (2000)]
28. A. Csótó, Low-lying continuum structures in  ${}^8\text{B}$  and  ${}^8\text{Li}$  in a microscopic model, Phys. Rev. **C61**, 024311 (2000)
29. A. Csótó, Role of spectroscopic factors in the potential-model description of the  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  reaction, Phys. Rev. **C61**, 037601 (2000)
30. H. Oberhummer, A. Csótó, and H. Schlattl, Stellar production rates of carbon and its abundance in the universe, Science **289**, 88 (2000)
31. A. Csótó and K. Langanke, Study of the  ${}^3\text{He}({}^4\text{He}, \gamma){}^7\text{Be}$  and  ${}^3\text{H}({}^4\text{He}, \gamma){}^7\text{Li}$  reactions in an extended two-cluster model, Few-body Syst. **29**, 121 (2000)
32. A. Csótó, At the edge of nuclear stability: nonlinear quantum amplifiers, submitted to Phys. Rev. C (nucl-th/0010050)
33. H. Schlattl, A. Heger, H. Oberhummer, T. Rauscher, and A. Csótó, Sensitivity of the C and O production on the  $3\alpha$  rate, Astrophys. and Space Sci. **291**, 27 (2004)

B. Conference proceedings published in journals:

- B1. A. Csótó,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, Heavy Ion Physics **6**, 103 (1997) [nucl-th/9704053] (see D23)
- B2. A. Csótó and G. M. Hale, *S*-matrix studies of resonances in  $A=3, 4, 5, 6$ , and 12 nucleon systems, Nucl. Phys. **A631**, 783c (1998) (see D25)
- B3. A. Csótó, H. Oberhummer, and H. Schlattl, At the edge of nuclear stability: nonlinear quantum amplifiers, Heavy Ion Physics **12**, 149 (2000) [nucl-th/0010051] (see D47)
- B4. A. Csótó and K. Langanke, Microscopic calculations for solar nuclear reactions, Nucl. Phys. **A688**, 511c (2001) (see D48)
- B5. A. Csótó, H. Oberhummer, and H. Schlattl, Fine-tuning the basic forces of nature by the triple-alpha process in red giant stars, Nucl. Phys. **A688**, 560c (2001) (see D49)
- B6. H. Oberhummer, A. Csótó, and H. Schlattl, Bridging the mass gaps at  $A = 5$  and  $A = 8$  in nucleosynthesis, Nucl. Phys. **A689**, 269c (2001)
- B7. A. Csótó, Few-body resonances in light nuclei, Few-body Syst. Suppl. **13**, 111 (2001) [nucl-th/0010105] (see D50)
- B8. H. Oberhummer, A. Csótó, M. Fairbairn, H. Schlattl, and M. M. Sharma, Temporal variation of coupling constants and nucleosynthesis, Nucl. Phys. **A719**, 283c (2003)

C. Archive articles:

- C1. A. Csótó, On the balance of the solar p-p chain, nucl-th/9505034 (1995)
- C2. A. Csótó, Importance of core polarization in halo nuclei, LA-UR-97-1690, nucl-th/9704054 (1997)
- C3. A. Csótó, On the three-body continuum spectrum of  ${}^6\text{He}$ , nucl-th/9807016 (1998)

D. Conference proceedings, talks, conference contributions, etc.:

- D1. A. Csótó, R. G. Lovas, A. T. Kruppa, Pole structure of the  $3/2^+$  resonance of  ${}^5\text{He}$ , Contributed papers p. 1.4.2, International Nuclear Physics Conference, July 26-August 1, 1992, Wiesbaden, Germany (Contributed paper)
- D2. A. Csótó, R. G. Lovas, Triton  ${}^3\text{He}$  admixture in the ground state of  ${}^6\text{Li}$ , Contributed papers p. 1.4.8, International Nuclear Physics Conference, July 26-August 1, 1992, Wiesbaden, Germany (Contributed paper)
- D3. A. Csótó, R. G. Lovas, Dynamical microscopic three-cluster description of  ${}^6\text{Li}$ , Contributed papers p. 1.4.9, International Nuclear Physics Conference, July 26-August 1, 1992, Wiesbaden, Germany (Contributed paper)
- D4. A. Csótó, Shadow-pole structure in the  $d + t \rightarrow \alpha + n$  thermonuclear reaction, June 6, 1993, University of Brussels, Physics Department, Brussels, Belgium (Seminar talk)
- D5. A. Csótó, Microscopic dynamical multicluster description of the structure and reactions of light nuclei, Contributed papers pp. 94-95, XIVth European Conference on Few-Body Problems in Physics 23-27 August, 1993, Amsterdam, The Netherlands (Contributed paper)
- D6. A. Csótó, Beta-delayed deuteron emission from  ${}^6\text{He}$ , November 17, 1993, California Institute of Technology, W. K. Kellogg Radiation Laboratory, Pasadena, California, USA (Seminar talk)
- D7. A. Csótó, Prime number statistics and quantum chaos, January 25, 1994, California Institute of Technology, W. K. Kellogg Radiation Laboratory, Pasadena, California, USA (Seminar talk)
- D8. A. Csótó, Three-body resonances, March 1, 1994, Los Alamos National Laboratory, Theoretical Division, Los Alamos, New Mexico, USA (Seminar talk)
- D9. A. Csótó, The solar neutrino problem, March 3, 1994, New Mexico State University, Physics Department, Las Cruces, New Mexico, USA (Seminar talk)

- D10. A. Csótó, Nuclei far from stability, March 30, 1994, California Institute of Technology, W. K. Kellogg Radiation Laboratory, California, USA (Seminar talk)
- D11. A. Csótó, Three-body resonances by complex scaling, Contributed papers, pp. 777-780, 14th International Conference on Few-Body Problems in Physics, May 26-31, 1994, Williamsburg, Virginia, USA (Contributed paper)
- D12. A. Csótó, Neutron halo structure of  ${}^6\text{He}$ , August 25, 1994, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA (Seminar talk)
- D13. A. Csótó, The solar neutrino problem, November, 1994, Kossuth University, Theoretical Physics Department, Debrecen, Hungary (Seminar talk)
- D14. A. Csótó, Exotic nuclei, January 12, 1995, Institute of Nuclear Research, Debrecen, Hungary (Seminar talk)
- D15. A. Csótó, Chromium neutrino source experiment at GALLEX, March 17, 1995, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA (Seminar talk)
- D16. A. Csótó, Few-body dynamics in nuclear structure and reactions, March 30, 1995, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA (Seminar talk)
- D17. A. Csótó, Quantum Monte Carlo methods for light nuclei, June 23, 1995, Michigan State University, National Superconducting Cyclotron Laboratory, East Lansing, Michigan, USA (Seminar talk)
- D18. A. Csótó, Parity violating alpha-decay of the  $J^\pi; T = 0^+; 1$  state of  ${}^6\text{Li}$ , September 29, 1995, Argonne National Laboratory, Argonne, Illinois, USA (Talk)
- D19. A. Csótó, Few-body dynamics in nuclear structure and reactions (neutron halos, astrophysical processes, and nuclear parity violation), June 25, 1996, Los Alamos National Laboratory, Los Alamos, New Mexico, USA (Seminar talk)

- D20. A. Csótó, B. F. Gibson, and I. R. Afnan, Soft dipole modes in neutron-rich light nuclei, American Physical Society, 1996 Fall Meeting, October 2-5, 1996, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA (Contributed paper, Published in Bull. Amer. Phys. Soc. **41**, 1252 (1996))
- D21. B. F. Gibson, A. Csótó, Photon Angular Asymmetry in  $n+p \rightarrow {}^2\text{H}+\gamma$ , American Physical Society, 1996 Fall Meeting, October 2-5, 1996, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA (Contributed paper, Talk, Published in Bull. Amer. Phys. Soc. **41**, 1255 (1996))
- D22. I. R. Afnan, A. Csótó, B. F. Gibson, Soft dipole modes in neutron-rich light nuclei, Gull Lake Conference on Nuclear Physics Near the Drip Lines, August 21-24, 1996, Gull Lake, Michigan, USA (Contributed paper)
- D23. A. Csótó,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, International Symposium on Exotic Nuclear Shapes, May 12-17, 1997, Debrecen, Hungary (Contributed paper, Talk, Published in Heavy-Ion Physics **6**, 103 (1997))
- D24. A. Csótó,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, Contributed papers p. 502, XVth International Conference on Few-Body Problems in Physics, July 22-26, 1997, Groningen, The Netherlands (Contributed paper)
- D25. A. Csótó and G. M. Hale,  $S$ -matrix studies of resonances in the  $A=3, 4, 5, 6$ , and 12 nucleon systems, Contributed papers p. 504, XVth International Conference on Few-Body Problems in Physics, July 22-26, 1997, Groningen, The Netherlands (Contributed paper, Talk, Published in Nucl. Phys. A**631**, 783c (1997))
- D26. A. Csótó and K. Langanke, Parity-violating  $\alpha$ -decay of the 3.56 MeV  $0^+$  state of  ${}^6\text{Li}$  in a microscopic  $\alpha + p + n$  model, Contributed papers p. 350, XVth International Conference on Few-Body Problems in Physics, July 22-26, 1997, Groningen, The Netherlands (Contributed paper)

- D27. A. Csoto,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, August 11, 1997, Oak Ridge National Laboratory, Joint Institute for Heavy Ion Research, Oak Ridge, Tennessee, USA (Seminar talk)
- D28. A. Csoto,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, August 12, 1997, Duke University, Triangle Universities Nuclear Laboratory, Durham, North Carolina, USA (Seminar talk)
- D29. A. Csoto, Nuclear physics input for solar models, October 20, 1997, Aarhus University, Physics Department, Aarhus, Denmark (Seminar talk)
- D30. A. Csoto,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, November 7, 1997, RIKEN, Linac Laboratory, Tokyo, Japan (Seminar talk)
- D31. A. Csoto, Nuclear physics input for solar models, XVIIth RCNP International Symposium on Innovative Computational Methods in Nuclear Many-Body Problems, November 10-15, 1997, Osaka, Japan (Talk, Published in the conference proceedings, p. 214 (World Scientific, 1998), nucl-th/9712033)
- D32. A. Csoto,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, November 17, 1997, Kyushu University, Physics Department, Fukuoka, Japan (Seminar talk)
- D33. A. Csoto, S-matrix studies of light nuclei, November 20, 1997, Hokkaido University, Physics Department, Sapporo, Japan (Seminar talk)
- D34. A. Csoto,  ${}^7\text{Be}(p, \gamma){}^8\text{B}$  and the high-energy solar neutrino flux, November 21, 1997, Hokkaido University, Physics Department, Sapporo, Japan (Seminar talk)
- D35. A. Csoto, Nuclear physics input for solar models, January 20, 1998, Los Alamos National Laboratory, Los Alamos, New Mexico, USA (Seminar talk)
- D36. A. Csoto, Nuclear physics input for solar models, February 9, 1998, Institute for Nuclear Theory, University of Washington, Seattle, Washington, USA (Seminar talk)

- D37. A. Csótó and K. Langanke, Microscopic calculations for solar nuclear reactions, Contributed papers p. 160, 16th European Conference on Few-body Problems in Physics, June 1-6, 1998, Autrans, France (Contributed paper)
- D38. H. Oberhummer, R. Pichler, and A. Csótó, The triple-alpha process and its anthropic significance, V. Nuclei in the Cosmos Conference, July 6-11, 1998, Volos, Greece (Talk, published in the conference proceedings, p. 119 (Editions Frontiers), nucl-th/9810057)
- D39. A. Csótó, Nuclear astrophysics, October 27, 1998, Department of Atomic Physics, Eötvös University, Budapest, Hungary (Seminar talk)
- D40. A. Csótó, Nuclear physics input for solar models, March 3, 1999, Department of Theoretical Physics, Eötvös University, Budapest, Hungary (Seminar talk)
- D41. H. Oberhummer, A. Csótó, and H. Schlattl, Fine tuning carbon-based life in the universe by the triple-alpha process in red giants, The Future of the Universe and the Future of our Civilization Symposium, July 2-6, 1999, Budapest, Hungary (Talk, published in the conference proceedings, p. 197 (World Scientific, 2000), astro-ph/9908247)
- D42. A. Csótó, Fine tuning carbon-based life in the universe by the triple-alpha process in red giants, November 4, 1999, Hungarian Academy of Sciences, Budapest, Hungary (Research seminar talk)
- D43. A. Csótó, What is the connection between tooth-brushing and supernovae?, February 8, 2000, Department of Atomic Physics, Eötvös University, Budapest, Hungary (Seminar talk)
- D44. A. Csótó, Evidence for oscillation of atmospheric neutrinos (finite neutrino mass), March 21, 2000, Department of Atomic Physics, Eötvös University, Budapest, Hungary (Seminar talk)
- D45. A. Csótó, The solar neutrino problem, March 22, 2000, Department of Astronomy, Eötvös University, Budapest, Hungary (Seminar talk)

- D46. A. Csótó, At the edge of nuclear stability: nonlinear quantum amplifiers, April 29, 2000, Halo 2000 workshop, April 28-30, 2000, Brussels, Belgium (Talk)
- D47. A. Csótó, At the edge of nuclear stability: nonlinear quantum amplifiers, Exotic Nuclear Structures Conference, May 15-20, 2000, Debrecen, Hungary (Talk, Published in *Heavy Ion Physics* **12**, 149 (2000))
- D48. A. Csótó, and K. Langanke, Microscopic calculations for solar nuclear reactions, Contributed papers p. 135, Nuclei in the Cosmos 2000 Conference, June 27 - July 1, 2000, Aarhus, Denmark (Contributed paper, Poster, Published in *Nucl. Phys.* **A688**, 511c (2001))
- D49. A. Csótó, H. Oberhummer, and H. Schlattl, Fine tuning carbon-based life in the universe by the triple-alpha process in red giant stars, Contributed papers p. 159, Nuclei in the Cosmos 2000 Conference, June 27 - July 1, 2000, Aarhus, Denmark (Contributed paper, Poster, Published in *Nucl. Phys.* **A688**, 560c (2001))
- D50. A. Csótó, Few-body resonances in light nuclei, International Workshop on Resonances in Few-body Systems, September 4-8, 2000, Sárospatak, Hungary (Talk)
- D51. A. Csótó, Solar neutrinos, December 21, 2000, Talk given at the Physics and Mathematics Winter Symposium of Secondary School Students, Eötvös University, Budapest, Hungary (Talk)
- D52. A. Csótó, Are the physical constants constant?, October 21, 2003, Department of Atomic Physics, Eötvös University, Budapest, Hungary (Seminar talk)
- D53. A. Csótó, Are the physical constants constant?, February 26, 2004, Ortway Colloquium, Institute of Physics, Eötvös University, Budapest, Hungary (Colloquium talk)
- D54. A. Csótó, Are the physical constants constant?, May 6, 2004, Institute of Nuclear Research, Debrecen, Hungary (Colloquium talk)
- D55. A. Csótó, Big-bang nucleosynthesis, May 24, 2004, Theoretical Physics School on Cosmology, Gyöngyöstarján, Hungary (Talk)

D56. A. Csóto, At the limits of nuclear stability: nuclei as nonlinear quantum amplifiers, November 24, 2005, Department of Theoretical Physics, Eötvös University, Budapest, Hungary (Seminar talk)

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