

## A.S. UMAR

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### Personal

*Birth Date:* November 9, 1957  
*Nationality:* U.S. Citizen

### Education

*Ph.D.:* June 1985, Yale University, Physics Department, New Haven, CT  
*M.S.:* June 1981, Yale University, Physics Department, New Haven, CT  
*M.Phil.:* June 1981, Yale University, Physics Department, New Haven, CT  
*B.S.:* June 1979, Bogazici University, Istanbul, Turkey

### Positions

- *Professor of Physics*  
2000-\*, Vanderbilt University, Department of Physics and Astronomy, Nashville, TN
- *Associate Professor of Physics (with tenure)*  
1993-2000, Vanderbilt University, Department of Physics and Astronomy, Nashville, TN
- *Assistant Professor of Physics*  
1986-1993, Vanderbilt University, Department of Physics and Astronomy, Nashville, TN
- *Research Investigator*  
1985-1986, University of Pennsylvania, Physics Department, Philadelphia, PA  
1984-1985, Oak Ridge National Laboratory, Physics Division, Oak Ridge, TN
- *Research Assistant*  
1981-1984, Wright Nuclear Structure Laboratory, Yale University, New Haven, CT
- *Teaching Assistant*  
1979-1981, Physics Department, Yale University, New Haven, CT
- *Research Assistant*  
June-September 1978, Rutherford Laboratory, Oxford, UK

### Specialization

*Main Field:* Theoretical Nuclear Physics  
*Other Fields:* Computational Physics  
*Current Research Interests:* Nuclear Structure, Relativistic Heavy-Ion Collisions, Nonperturbative QED, High-Performance Computing

### Awards, Fellowships, Consultantships, Memberships

*Graduate Fellowship:* Yale University, 1979-1981  
*Undergraduate Fellowship:* Turkish Science Research Council, 1976-1979  
*Consultantships:* Oak Ridge National Laboratory, 1986-1994  
*Member:* APS, 1986-present, DNP, DCP

## Publication Summary

Articles Published in Refereed Journals: 72

Articles Published in Books: 36

Abstracts and Posters: 58

International Conferences: 49

Editor of Conference Proceedings: 2

Number of Citations to Date: 1228



<i>Physical Review C</i>	30
<i>Physics Letters B</i>	9
<i>Physical Review A</i>	6
<i>Physical Review Letters</i>	4
<i>Nuclear Physics A</i>	3
<i>Intl. Journal of Mod. Phys.</i>	3
<i>J. of Computational Phys.</i>	2
<i>Comp. Phys. Comm.</i>	2
<i>Astrophysical Journal</i>	2
<i>Physical Review E</i>	2
<i>Eur. Phys. J</i>	4
<i>Physics Reports</i>	1
<i>Annals of Physics</i>	1
<i>Nucl. Inst. Meth. B</i>	1

## Ph.D. Students

*David Dean:* 1987-1991, Head of Theory at ORNL  
*Cem Guclu:* 1989-1995, Full Professor in Turkey  
*Alan Calder:* 1992-1997, Asst. Professor, Stony Brook.  
*Edgar Teran:* 1998-2003, Company in Texas.

## External Research Grants

- *DOE Nuclear Physics and HPCC Grand Challenge:*

PI (with V.E. Oberacker and D.J. Ernst), 2009-2010, \$155,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2008-2009, \$155,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2007-2008, \$160,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2006-2007, \$130,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2005-2006, \$130,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2004-2005, \$130,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2003-2004, \$130,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2002-2003, \$125,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2001-2002, \$127,000  
 PI (with V.E. Oberacker and D.J. Ernst), 2000-2001, \$127,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1999-2000, \$127,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1998-1999, \$125,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1997-1998, \$125,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1996-1997, \$120,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1995-1996, \$120,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1994-1995, \$87,000  
 PI (contract with ORNL), 1994-1995, \$59,391  
 PI (with V.E. Oberacker), 1994-1995, \$30,000  
 PI (with V.E. Oberacker), 1993-1994, \$25,000  
 PI (with V.E. Oberacker and D.J. Ernst), 1993-1994, \$75,000  
 PI (with V.E. Oberacker), 1992-1993, \$120,000  
 PI (with V.E. Oberacker), 1990-1993, \$197,000  
 PI (with V.E. Oberacker), 1987-1990, \$115,000

- *DOE Computational Science Education Project (contracts with ORNL):*

PI, 1994-1996, \$178,550  
 PI, 1992-1994, \$220,800

- *NATO/NSF Cooperative Science Grants*

**U.S.-Japan Cooperative Science travel grant**

(divided among four PI's), 2002-2005, \$30,000

Grant for collaborative travel between Europe and US  
 (divided among four PI's), 1998-1999, \$7,500

- Grant for collaborative travel between Europe and US (divided among four PI's), 1992-1993, \$12,000
- *NSF Computer Infrastructure Grant:*  
PI D.J. Ernst, 13 Co-PI's including Umar, 1994-1995, \$357,000
  - *Salary Supplement for Sabbatical Leave (contract with ORNL):*  
PI, 1993-1994, \$30,703
  - *Supercomputer time from DOE:*  
100000 CPU hours on IBM SP (Seaborg) at NERSC 2004-2005  
50000 CPU hours on IBM SP (Seaborg) at NERSC 2003-2004  
15000 CPU hours on IBM SP (Seaborg) at NERSC 2002-2003  
7500 MPP hours on IBM SP (Seaborg) at NERSC 2001-2002  
625 CPU hours on Cray-SV1 at NERSC 2001-2002  
620 CPU hours on CRAY-2/C90 at NERSC 2000-2001  
600 CPU hours on CRAY-2/C90 at NERSC 1999-2000  
600 CPU hours on CRAY-2/C90 at NERSC 1998-1999  
700 CPU hours on CRAY-2/C90 at NERSC 1997-1998  
600 CPU hours on CRAY-2/C90 at NERSC 1996-1997  
560 CPU hours on CRAY-2/C90 at NERSC 1995-1996  
521 CPU hours on CRAY-2/C90 at NERSC 1994-1995  
500 CPU hours on CRAY-2/C90 at NERSC 1993-1994  
50 CPU hours on CRAY-2 at NERSC 1990-1991  
25 CPU hours on CRAY-XMP at NERSC 1989  
24 CPU hours on CRAY-XMP at NERSC 1988
  - *Supercomputer time from NSF:*  
300 CPU hours on CRAY-2 at NCSA, 1992-1993  
300 CPU hours on CRAY-2 at NCSA, 1991-1992  
200 CPU hours on CRAY-2 at NCSA, 1990-1991  
90 CPU hours on CRAY-2 at NCSA, 1989-1990  
155 CPU hours on CRAY-XMP at NCSA, 1988-1989
  - *IBM Research Support Grant:*  
500 CPU hours on IBM 3081 and \$5,000, 1987-1988

#### Conference Organizing Committees / Conference Reviews / Sessions Chaired

1. *International Symposium on Coherent States*, June 14-17, 1993, Oak Ridge, TN.
2. *First Symposium on Nuclear Physics in the Universe*, Sept. 24-26, 1992, Oak Ridge, TN.
3. *Computational Quantum Physics*, May 23-25, 1991, Vanderbilt University, Nashville, TN.
4. *Computational Atomic and Nuclear Physics*, June 25-July 7, 1989, The University of the South, Sewanee, TN.
5. *Supercomputing '94*, Washington DC, reviewer for the technical program.
6. *General Meeting of the APS, April 1994*, Washington DC, Chaired the invited talk session on Computational Physics.
7. *Physics Computing '95*, June 1995, Pittsburg, Chaired the invited talks session on Computational Graduate Education.
8. *International Workshop on Condensed Matter Theories XXII*, Nashville, TN, 1998.
9. *Structure and Dynamics of Elementary Matter*, NATO Advanced Study Institute, Kemer, Turkey, September 22 – October 2, 2003.
10. APS, DNP '06, Nashville, TN, Oct. 2006, Local Organizing Committee.

#### University Grants

- Computer Purchase Plan II (1991) - \$1,300

- Computer Purchase Plan I (1991) - \$1,800
- Support from College of Arts & Science, Chancellor, Graduate School, and Physics Department to organize the conference on *Computational Quantum Physics* (1991) - \$7,500
- College of Arts & Science support to purchase a share of the ORNL Intel iPSC/860 hypercube supercomputer (with Prof. V.E. Oberacker, 1989) - \$78,000
- University Research Council (with Prof. V.E. Oberacker, 1987) - \$4,000
- Kenan Venture Fund (1987) - \$1,600
- Grant-In-Aid, Natural Science Committee (1986) - \$2,500

### Academic Committees

- *Qualifier Committee (Editor):* Summer 1987
- *Qualifier Committee (Editor):* Summer 1988
- *Graduate Program Committee:* Spring 1989
- *Teaching Load Committee:* Spring 1989
- *Qualifier Committee (Editor):* Summer 1989
- *Pre-major Advisor:* Fall 1989-1990
- *Colloquium Committee (Chair):* Spring 1990
- *Qualifier Committee (Editor):* Summer 1990
- *Colloquium Committee (Chair):* Fall 1990
- *Colloquium Committee (Chair):* Spring 1991
- *Astronomy Search Committee:* Spring 1991
- *Qualifier Committee (Editor):* Summer 1991
- *High-School Summer Science Program:* Summer 1991
- *Overview of Physics for Minority Students:* Summer 1991
- *Department Chair Search Committee:* Fall 1991
- *Qualifier Committee (Editor):* Summer 1992
- *RHIC Search Committee:* Fall 1992
- *Graduate Program Committee:* Fall 1992
- *Qualifier Committee (Editor):* Summer 1994
- *Graduate Program Committee:* Fall 1994
- *Computer Infrastructure Committee:* Fall 1994
- *Academic Computing and Networking:* 1994-1995
- *Lagemann Professor Search Committee:* 1994-1995
- *Qualifier Committee (Editor):* Summer 1995
- *Teaching Evaluation of Prof. Bartelt:* Fall 1995
- *Committee on Student Faculty Relations:* F95-S96
- *Astrophysics Search Committee:* F95-S96
- *Colloquium Committee (Chair):* F95-S96
- *Computational Science Planning Committee (co-Chair):* F95-S96
- *Colloquium Committee (Chair):* Fall 1996
- *Committee on Student Faculty Relations:* Fall 1996
- *Qualifier Committee (Editor):* Summer 1996
- *Computational Science Planning Committee (co-Chair):* F96-S97
- *College Computer Advisory Committee:* F96-S97
- *Colloquium Committee (Chair):* F96-S97
- *Committee on Student Faculty Relations:* F96-S97
- *Physics Web Committee:* F97-S98
- *Graduate Program Committee:* F97-S98
- *Colloquium Committee (Chair):* F97-S98
- *Committee on Student Faculty Relations:* F97-S98

● <i>Academic Computing and Information Technology:</i>	F97-S98
● <i>College Computer Advisory Committee:</i>	F97-S98
● <i>Committee on Student Faculty Relations:</i>	F98-S99
● <i>Colloquium Committee (Chair):</i>	F98-S99
● <i>Physics Web Committee:</i>	F98-S99
● <i>College Computer Advisory Committee (Chair):</i>	F98-S99
● <i>Graduate Program Committee:</i>	F98-S99
● <i>Academic Computing and Information Technology:</i>	F98-S99
● <i>College Computer Advisory Committee (Chair):</i>	F99-S00
● <i>Academic Computing and Information Technology:</i>	F99-S00
● <i>Colloquium Committee (Chair):</i>	F99-S00
● <i>Internet and Computing Committee:</i>	F99-S00
● <i>Academic Computing and Information Technology:</i>	F00-S01
● <i>College Computer Advisory Committee (Chair):</i>	F00-S01
● <i>Colloquium Committee (Chair):</i>	F00-S01
● <i>College Computer Advisory Committee (Chair):</i>	F01-S02
● <i>Colloquium Committee (Chair):</i>	F01-S02
● <i>Academic Computing and Information Technology:</i>	F01-S02
● <i>Colloquium Committee (Chair):</i>	F02-S03
● <i>College Computer Advisory Committee (Chair):</i>	F02-S03
● <i>Academic Computing and Information Technology:</i>	F02-S03
● <i>Department Chair Search Committee:</i>	F02-S03

### Served on Ph.D. Committees

Liang-Ping Chen	HEP
Daniel J. Staton	Living State Physics
Jan M. van Egaraat	Living State Physics
Jun Xu	Surface/Atomic/Molecular
Heath Pois	HEP
David Dean	Nuclear ( <b>Chair</b> )
Wan-bao Gao	Nuclear
Jack Wells	Nuclear
Cem Guclu	Nuclear ( <b>Chair</b> )
David R. Kegley	Nuclear
Foorood Amirmadhi	FEL
Egyed Zoltan	HEP
Don H. Olive	Nuclear
Kyle Butler-Moore	Nuclear
James Allen	Surface/Atomic/Molecular
Alan Calder	Nuclear ( <b>Chair</b> )
Alan Bradshaw	Living State Physics
Sankaran Vijayalakshmi	Surface/Atomic/Molecular
Ning Qiu	Engineering
Detang Shi	Nuclear
Thomas Nelson Ginter	Nuclear
Szabolcs Marka	Particle Experimental
Christine Parks Cheney	Surface/Atomic/Molecular
Denis Malov	Nuclear
Biao Ye	Condensed Matter
Sergei Rousakov	Living State Physics
Rashida Abbas	Living State Physics

Jinhua Xi  
 Neil Primozich  
 Jun Chen  
 Edgar Teran  
 Lei Guo  
 Philip M. Gore  
 Mike Albert  
 Artur Blazkiewicz  
 Ryan Hatcher  
 Yelena V. Shiroyaka  
 Dennis Fong  
 Krista McBride  
 Xiong Lu  
 Arman Sainovitch Kussainov  
 Ke Li  
 Jesus Escamilla  
 Arman Sainovitch Kussainov  
 Joseph Andrew Driscoll  
 Shaohua Liu  
 David Pigg

Atomic Physics  
 Condensed Matter  
 Nuclear  
 Nuclear (**Chair**)  
 Nuclear  
 Nuclear  
 Condensed Matter  
 Nuclear  
 Condensed Matter  
 Condensed Matter  
 Nuclear  
 Biophysic  
 Condensed Matter  
 Health Physics  
 Nuclear  
 Nuclear  
 Radiology  
 Condensed Matter Theory  
 Nuclear  
 Nuclear (**Chair**)

### Courses Taught

Fall 1986, Physics 306  
 Spring 1987, Physics 321  
 Fall 1987, Physics 245  
 Fall 1987, Physics 300  
 Spring 1988, Physics 321  
 Fall 1988, Physics 306  
 Fall 1988, Physics 245  
 Spring 1989, Physics 117B  
 Fall 1989, Physics 329a  
 Fall 1989, Physics 300  
 Spring 1990, Physics 117B  
 Fall 1990, Physics 329a  
 Fall 1990, Physics 300  
 Spring 1991, Physics 117B  
 Fall 1991, Physics 245  
 Spring 1992, Physics 117B  
 Fall 1992, Physics 329a  
 Fall 1992, Physics 300  
 Spring 1993, Lab Czar  
 Fall 1994, Physics 245  
 Fall 1994, Physics 300  
 Spring 1995, Physics 117B  
 Fall 1995, Physics 245  
 Spring 1996, Physics 117B  
 Fall 1996, Physics 245  
 Spring 1997, Physics 117B  
 Fall 1997, Physics 245  
 Fall 1997, Lab Czar  
 Spring 1998, Physics 117B  
 Fall 1998, Physics 245  
 Spring 1999, Physics 117B  
 Fall 1999, Physics 245  
 Spring 2000, Lab Czar  
 Fall 2000, Physics 245

Advanced Electrodynamics  
 Classical Field Theory  
 Computational Physics  
 Graduate Seminar  
 Classical Field Theory  
 Advanced Electrodynamics  
 Computational Physics  
 Introductory Physics  
 Advanced Electrodynamics  
 Graduate Seminar  
 Introductory Physics  
 Advanced Electrodynamics  
 Graduate Seminar  
 Introductory Physics  
 Computational Physics  
 Introductory Physics  
 Advanced Electrodynamics  
 Graduate Seminar  
 Undergraduate Physics Laboratories  
 Computational Physics  
 Graduate Seminar  
 Introductory Physics  
 Computational Physics  
 Introductory Physics  
 Computational Physics  
 Introductory Physics  
 Computational Physics  
 Introductory Physics  
 Computational Physics  
 Undergraduate Physics Laboratories  
 Introductory Physics  
 Computational Physics  
 Introductory Physics  
 Computational Physics  
 Undergraduate Physics Laboratories  
 Computational Physics

Spring 2001, Physics 117B  
Fall 2001, Physics 329a  
Spring 2002, Physics 329b  
Fall 2002, Physics 329a  
Spring 2003, Physics 245  
Spring 2003  
Fall 2003  
Spring 2004, Physics 117B  
Fall 2004, Physics 116B  
Spring 2005, Physics 245  
Fall 2005, Physics 116B  
Spring 2006, Physics 117B  
Fall 2006, Phys. 329a  
Spring 2007, Phys. 329B  
Fall 2007, Phys. 308  
Spring 2008, Phys. 329A  
Fall 2008, Phys. 308  
Spring 2009, Phys. 329A  
Fall 2009, Phys. 308  
Spring 2010

Introductory Physics  
Advanced Electrodynamics  
Classical Field Theory  
Advanced Electrodynamics  
Computational Physics  
Lab Czar  
Sabbatical  
Introductory Physics  
Introductory Physics  
Computational Physics  
Introductory Physics  
Introductory Physics  
Advanced Electrodynamics  
Classical Field Theory  
Mathematical Methods for Physicists  
Advanced Electrodynamics  
Mathematical Methods for Physicists  
Advanced Electrodynamics  
Mathematical Methods for Physicists  
Sabbatical

### Articles Published in Refereed Journals

1. *Time-Dependent Hartree-Fock Picture of Nuclear Molecular Resonances*, Phys. Lett. 135B, 261-265 (1984), M.R. Strayer, R.Y. Cusson, A.S. Umar, P.-G. Reinhard, D.A. Bromley, and W. Greiner.
2. *A Time-Dependent External Field Model for Particle Emission in Heavy-Ion Reactions*, Phys. Lett. 140B, 290-294 (1984), A.S. Umar, M.R. Strayer, and D.J. Ernst.
3. *Mean-Field Theory of Prompt, High-Energy Nucleon Emission*, Phys. Rev. C30, 1934-1948 (1984), A.S. Umar, M.R. Strayer, D.J. Ernst, and K.R.S. Devi.
4. *Time-Dependent Hartree-Fock Calculations of  $4\text{He}+^{14}\text{C}$ ,  $^{12}\text{C}+^{12}\text{C}(0^+)$ ,  $4\text{He}+^{20}\text{Ne}$  Molecular Formations*, Phys. Rev. C32, 172-183 (1985), A.S. Umar, M.R. Strayer, R.Y. Cusson, P.-G. Reinhard, and D.A. Bromley.
5. *Correlations Between Preequilibrium Nucleons*, Phys. Rev. Lett. 55, 584-587 (1985), D.J. Ernst, M.R. Strayer, and A.S. Umar.
6. *Nuclear Shape-Isomeric Vibrations*, Phys. Lett. B171, 353-357 (1986), A.S. Umar and M.R. Strayer.
7. *Application of a Self-Consistent Theory of Large Amplitude Collective Motion to the Generalized Lipkin Model*, Nucl. Phys. A458, 246-258 (1986), A.S. Umar and Abraham Klein.
8. *Resolution of the Fusion Window Anomaly in Heavy-Ion Reactions*, Phys. Rev. Lett. 56, 2793-2796 (1986), A.S. Umar, M.R. Strayer, and P.-G. Reinhard.
9. *Relativistic Hartree Calculations for Axially Deformed Nuclei*, Phys. Rev. Lett. 57, 2916-2919 (1986), S.-J. Lee, J. Fink, A.B. Balantekin, M.R. Strayer, A.S. Umar, P.-G. Reinhard, J.A. Maruhn, and W. Greiner.
10. *Physical Interpretation and Quantization of Periodic TDHF Solutions*, Phys. Rev. C34, 1965-1968 (1986), Abraham Klein and A.S. Umar.
11. *Physical Interpretation of Time-Dependent Hartree-Fock Density Matrix for Heavy-Ion Scattering*, Phys. Rev. C35, 1672-1677 (1987), Abraham Klein and A.S. Umar.
12. *Enhanced Dissipation in New Mean Field Studies of Strongly Damped Collisions*, Phys. Lett. B196, 419-423 (1987), S.-J. Lee, A.S. Umar, K.T.R. Davies, M.R. Strayer, and P.-G. Reinhard.
13. *Relativistic Hartree Calculations for Axially Deformed Nuclei*, Phys. Rev. Lett. E59, 1171-1172 (1987), S.-J. Lee, J. Fink, A.B. Balantekin, M.R. Strayer, A.S. Umar, P.-G. Reinhard, J.A. Maruhn, and W. Greiner.
14. *Dissipation and Forces in TDHF*, Phys. Rev. C37, 1026-1035 (1988), P.-G. Reinhard, A.S. Umar, K.T.R. Davies, M.R. Strayer, and S.-J. Lee.

15. *Calculation of Continuum Excitation Amplitudes for Time-Dependent External Field Problems*, Phys. Rev. C37, 2487-2494 (1988), C. Bottcher, M.R. Strayer, A.S. Umar, V.E. Oberacker.
16. *Spin-Orbit Force in TDHF Calculations of Heavy-Ion Collisions*, Phys. Rev. C40, 706-714 (1989), A.S. Umar, P.-G. Reinhard, M.R. Strayer, K.T.R. Davies, and S.-J. Lee.
17. *Velocity Dependence of Prompt, High-Energy Nucleon Emission*, Phys. Rev. C40, 1213-1218 (1989), D.J. Dean, A.S. Umar, and M.R. Strayer.
18. *Damped Relaxation Method to Calculate Relativistic Bound States*, Phys. Rev. A40, 4182-4189 (1989), C. Bottcher, M.R. Strayer, A.S. Umar, and P.-G. Reinhard.
19. *Lattice Calculation of Muon-Pair Production with Capture in Relativistic Heavy-Ion Collisions*, Phys. Rev. A41, 1399-1407 (1990), M.R. Strayer, C. Bottcher, V.E. Oberacker, and A.S. Umar.
20. *Basis-Spline Collocation Method for the Lattice Solution of Boundary Value Problems*, J. Comp. Phys. 93, 426-448 (1991), A.S. Umar, J. Wu, M.R. Strayer, and C. Bottcher.
21. *Numerical Methods for Nuclear Mean Field Dynamics*, A thematic issue on Time Dependent Methods for Quantum Dynamics, Comp. Phys. Comm. 63, 179-188 (1991), A.S. Umar and M.R. Strayer.
22. *Nuclear Hartree-Fock Calculations with Splines*, Phys. Rev. C44, 2512-2521 (1991), A.S. Umar, M.R. Strayer, J.-S. Wu, D.J. Dean, and C. Guclu.
23. *A Dynamical String-Parton Model for Relativistic Heavy-Ion Collisions*, Phys. Rev. C45, 400-414 (1992), D.J. Dean, A.S. Umar, J.-S. Wu, and M.R. Strayer.
24. *Nonperturbative Electromagnetic Lepton-Pair Production in Peripheral Relativistic Heavy-Ion Collisions*, Phys. Rev. A45, 6296-6312 (1992), J.C. Wells, V.E. Oberacker, A.S. Umar, C. Bottcher, M.R. Strayer, J.-S. Wu, and G. Plunien.
25. *A Dynamical String-Parton Model for Relativistic Heavy-Ion Collisions*, Nucl. Phys. A544, 475-478 (1992), A.S. Umar, D.J. Dean, J.-S. Wu, and M.R. Strayer.
26. *Multiparticle Production in Lepton-Nucleus Collisions and Relativistic String Models*, Phys. Rev. C46, 2066-2076 (1992), D.J. Dean, M. Gyulassy, B. Müller, E.A. Remler, M.R. Strayer, A.S. Umar, and J.-S. Wu.
27. *Study of Nuclear Dissipation via Muon-Induced Fission: a Relativistic Lattice Calculation*, Phys. Lett. B293, 270-274 (1992), V.E. Oberacker, A.S. Umar, J.C. Wells, M.R. Strayer, C. Bottcher.
28. *A Numerical Implementation of the Dirac Equation on a Hypercube Multicomputer*, Int. J. Mod. Phys. C4, 459-492 (1993), J.C. Wells, A.S. Umar, V.E. Oberacker, C. Bottcher, M.R. Strayer, J.-S. Wu, J. Drake, and R. Flanery.
29. *Dynamical Calculation of Central Energy Density in Relativistic Heavy-Ion Collisions*, Int. J. Mod. Phys. E2, 565-573 (1993), D.J. Dean, A.S. Umar, and M.R. Strayer.
30. *Dynamical Evolution of Hadronic Matter in Relativistic Collisions*, Phys. Rev. C48, 2433-2442 (1993), D.J. Dean, A.S. Umar, and M.R. Strayer.

31. *Muon- Induced Fission: A Probe for Nuclear Dissipation and Fission Dynamics* , Phys. Rev. C48, 1297-1306 (1993), V.E. Oberacker, A.S. Umar, J.C. Wells, C. Bottcher, M.R. Strayer, and J.A. Maruhn.
32. *Shape Coexistence Around 44S; The Deformed N=28 Region* , Phys. Lett. B333, 303-309 (1994), T.R. Werner, J.A. Sheikh, W. Nazarewicz, M.R. Strayer, A.S. Umar, and M. Misu.
33. *Parallel Implementation of Many-Body Mean-Field Equations* , Phys. Rev. E50, 5096-5106 (1994), C.R. Chinn, A.S. Umar, M. Vallieres, and M.R. Strayer.
34. *Shape Coexistence Around 44S; The Deformed N=28 Region* , Phys. Lett. B335, 259-264 (1994), T.R. Werner, J.A. Sheikh, W. Nazarewicz, M.R. Strayer, A.S. Umar, and M. Misu.
35. *Spectral Properties of Derivative Operators in the Basis-Spline Collocation Method* , Intl. J. Mod. Phys. C6, 143-167 (1995), J.C. Wells, V.E. Oberacker, M.R. Strayer, A.S. Umar.
36. *Impact Parameter Dependence of Multiple Lepton-Pair Production from Electromagnetic Fields* , Phys. Rev. A51, 1836-1844 (1995), C. Guclu, J.C. Wells, A.S. Umar, M.R. Strayer, D.J. Ernst.
37. *Microscopic Nuclear Structure on a Parallel Platform* , Comp. Phys. Comm. 86, 40-60 (1995), C.R. Chinn, A.S. Umar, M. Vallieres, and M.R. Strayer.
38. *Lattice Calculation for Lepton Capture from Vacuum-Pair Production in Relativistic Heavy Ion Collisions* , Nucl. Inst. Meth. B99, 293-296 (1995), J.C. Wells, V.E. Oberacker, M.R. Strayer, and A.S. Umar.
39. *Convergence of a Lattice Calculation for Bound-Free Muon-Pair Production in Peripheral Relativistic Heavy-Ion Collisions* , Phys. Rev. A53, 1498-1504 (1996), J.C. Wells, V.E. Oberacker, M.R. Strayer, and A.S. Umar.
40. *Structure of Proton Drip-Line Nuclei Around Doubly-Magic  $^{48}\text{Ni}$*  , Phys. Rev. C53, 740-751 (1996), W. Nazarewicz, J. Dobaczewski, T. Werner, J. Maruhn, P.-G. Reinhard, K. Rutz, C. Chinn, S. Umar, and M. Strayer.
41. *Mean Field Studies of Exotic Nuclei* , Phys. Rep. 264, 107-121 (1996), C.R. Chinn, A.S. Umar, M. Vallieres, and M.R. Strayer.
42. *Ground State Properties of Exotic Si, S, Ar, and Ca Isotopes* , Nucl. Phys. A597, 327-340 (1996), T.R. Werner, J.A. Sheikh, M. Misu, W. Nazarewicz, J. Rikowska, K. Heeger, A.S. Umar, and M.R. Strayer.
43. *Basis Spline Collocation Method for Solving the Schroedinger Equation in Axially Symmetric Systems* , J. Comp. Phys. 128, 197-208 (1996), D.R. Kegley, V.E. Oberacker, M.R. Strayer, A.S. Umar, and J.C. Wells.
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