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## JAMES DONALD MEISS

**Address** Department of Applied Mathematics  
University of Colorado  
526 UCB  
Boulder, CO 80309-0526

**Telephone** (303) 492-3731  
(303) 492-4066 (FAX)

**Email** jdm@colorado.edu

### **Education**

|               |                                               |           |
|---------------|-----------------------------------------------|-----------|
| B.S. Physics  | Montana State University<br>(first two years) |           |
|               | University of Washington<br>(final year)      | June 1975 |
| M.A. Physics  | University of California at Berkeley          | June 1977 |
| Ph.D. Physics | University of California at Berkeley          | June 1980 |

### **Employment History**

|                        |                                                                     |              |
|------------------------|---------------------------------------------------------------------|--------------|
| Research<br>Fellow     | Institute for Fusion Studies<br>University of Texas at Austin       | 1980-1982    |
| Research<br>Associate  | Institute for Fusion Studies<br>University of Texas at Austin       | 1982-1984    |
| Research<br>Scientist  | Institute for Fusion Studies<br>University of Texas at Austin       | 1984-1989    |
| Associate<br>Professor | Program in Applied Mathematics<br>University of Colorado at Boulder | 1989-1992    |
| Full<br>Professor      | Dept. of Applied Mathematics<br>University of Colorado at Boulder   | 1992-Present |

## Honors

|                                                                                |      |
|--------------------------------------------------------------------------------|------|
| Member, Institute for Theoretical Physics,<br>UC Santa Barbara                 | 1985 |
| Fellow of the American Physical Society                                        | 1990 |
| Research Professor, Mathematical Sciences<br>Research Institute, UC Berkeley   | 2007 |
| Sydney University International<br>Visiting Research Fellowship                | 2009 |
| College of Engineering Student Leadership Council<br>Outstanding Faculty Award | 2012 |
| Dresden Senior Fellow,<br>Technische Universität Dresden                       | 2016 |
| Simons Visiting Professor<br>Mathematical Sciences Research Institute          | 2018 |
| Fellow, Society for Industrial and Applied Mathematics                         | 2023 |

## Visiting Positions

|                        |                                                                              |                         |
|------------------------|------------------------------------------------------------------------------|-------------------------|
| Postdoctoral<br>Fellow | Woods Hole Oceanographic Inst.<br>Geophysical Fluid Dynamics                 | June-September 1980     |
| Visiting<br>Professor  | Department of Applied Mathematics<br>Queen Mary College, Univ. of London     | March-September 1983    |
| Visiting<br>Scientist  | Institute for Theoretical Physics<br>University of California, Santa Barbara | January-March 1985      |
| Visiting<br>Scientist  | Department of Applied Mathematics<br>Queen Mary College, Univ. of London     | June-September 1986     |
| Visiting<br>Professor  | Mathematics Institute<br>University of Warwick, Coventry                     | February-April 1987     |
| Research<br>Scientist  | Lawrence Berkeley Laboratory<br>University of California at Berkeley         | January-July 1989       |
| Visiting<br>Professor  | University of London<br>Centre for Nonlinear Dynamics                        | September-December 1993 |
| Visiting<br>Professor  | Loughborough University<br>Department of Mathematics                         | October 2000            |

|                              |                                                                                   |               |
|------------------------------|-----------------------------------------------------------------------------------|---------------|
| Visiting<br>Scientist        | Newton Institute<br>Cambridge University                                          | November 2000 |
| Research in<br>Pairs         | Oberwolfach Institute<br>Collaborative Research                                   | June 2004     |
| Visiting<br>Professor        | University of Queensland<br>< <a href="#">ICE-EM Australian Graduate School</a> > | July 2005     |
| Research<br>Professor        | Mathematical Sciences Research Inst.<br>University of California at Berkeley      | Jan-May 2007  |
| Visiting<br>Professor        | Department of Mathematics<br>University of Sydney                                 | July-Aug 2009 |
| Senior<br>Fellow             | Center for Dynamics<br>Technische Universität Dresden                             | June 2016     |
| Simons<br>Visiting Professor | Mathematical Sciences Research Inst.<br>Berkeley CA                               | Aug-Dec 2018  |

## PUBLICATIONS

### 0. Thesis

J.D. Meiss, “Statistical Dynamics of Weakly Nonlinear Internal Waves,” University of California at Berkeley, June 1980 (University Microfilms, Ann Arbor), 117pp.

### I. Published Books

- 1) R.S. MacKay and J.D. Meiss (Eds.) Hamiltonian Dynamical Systems: a reprint selection, (1987), Adam-Hilgar Press, 784pp., ISBN 0-85274-205-3.
- 2) R.D. Hazeltine and J.D. Meiss, Plasma Confinement, (1991), Addison Wesley, 394 pp., ISBN 0201-53353-5.
- 3) R.D. Hazeltine and J.D. Meiss, Plasma Confinement, (2003) 2<sup>nd</sup> Edition, Dover Press, 480 pp., ISBN 0486432424.

- 4) J.D. Meiss, Differential Dynamical Systems, (2007) SIAM, Philadelphia 412 pp., ISBN 978-0-899816-35-1.
- 5) J.D. Meiss, Differential Dynamical Systems (Revised Edition), (2017) SIAM, Philadelphia 392 pp., ISBN 978-1-611974-63-8.

## **II. Published Journal Articles**

- 1) J.D. Meiss and N. R. Pereira, “Internal Wave Solitons,” *Physics of Fluids* **21**, 700-702 (1978).
- 2) J.D. Meiss, “Integrability of Multiple Three Wave Interactions,” *Physical Review* **A19**, 1780–1789 (1979).
- 3) J.D. Meiss, N. Pomphrey, and K. M. Watson, “Numerical Analysis of Weakly Nonlinear Wave Turbulence,” *Proceedings of the National Academy of Sciences U.S.A.* **76**, 2109-2113 (1978).
- 4) N. Pomphrey, J.D. Meiss, and K. M. Watson, “Description of Nonlinear Internal Wave Interactions Using Langevin Methods,” *Journal of Geophysical Research* **85**, 1085–1094 (1980).
- 5) J.D. Meiss and K. M. Watson, “Internal Wave Interactions in the Induced Diffusion Approximation,” *Journal of Fluid Mechanics* **117**, 315–341 (1982).
- 6) J.D. Meiss and K. M. Watson, “Relaxation Processes for a Three Wave Interaction Model,” *Proceedings of the National Academy of Sciences U.S.A.* **78**, 2029–2032 (1981).
- 7) J. R. Cary, J.D. Meiss, and A. Bhattacharjee, “Statistical Characterization of Periodic Measure-Preserving Mappings,” *Physical Review* **A23**, 2744–2746 (1981).
- 8) J. R. Cary and J.D. Meiss, “Rigorously Diffusive Deterministic Map,” *Physical Review* **A24**, 2664–2668 (1981).
- 9) J.D. Meiss, R.D. Hazeltine, P. H. Diamond, and S. M. Mahajan, “Effect of Turbulent Diffusion on Collisionless Tearing Instabilities,” *Physics of Fluids* **25**, 815–820 (1982).
- 10) J.D. Meiss and W. Horton, “Fluctuation Spectra of a Drift Wave Soliton Gas,” *Physics of Fluids* **25**, 1838–1843 (1982).
- 11) J.D. Meiss and W. Horton, “Drift-Wave Turbulence from a Soliton Gas,” *Physical Review Letters* **48**, 1362–1364 (1982).
- 12) J.D. Meiss, J. R. Cary, C. Grebogi, J.D. Crawford, A. N. Kaufman and H.D.I. Abarbanel, “Correlations of Periodic Area-Preserving Maps,” *Physica D* **6**, 375–384 (1983).
- 13) J.D. Meiss and W. Horton, “Solitary Drift Waves in the Presence of Magnetic Shear,” *Physics of Fluids* **26**, 990–997 (1983).

- 14) J.D. Meiss and P.J. Morrison, "Nonlinear Electron Landau Damping of Ion Acoustic Solitons," *Physics of Fluids* **26**, 983–989 (1983).
- 15) P. J. Morrison, J.D. Meiss, and J. R. Cary, "Scattering of Regularized-Long-Wave Solitary Waves," *Physica D* **11**, 324–336 (1984).
- 16) R.S. MacKay and J.D. Meiss, "Linear Stability of Periodic Orbits in Lagrangian Systems," *Physics Letters* **98A**, 92–94 (1983).
- 17) R.S. MacKay, J.D. Meiss, and I.C. Percival, "Stochasticity and Transport in Hamiltonian Systems," *Physical Review Letters* **52**, 697–700, (1984).
- 18) R.S. MacKay, J.D. Meiss, and I.C. Percival, "Transport in Hamiltonian Systems," *Physica D* **13**, 55–81 (1984).
- 19) R.D. Hazeltine and J.D. Meiss, "Shear-Alfvén Dynamics of Toroidally Confined Plasmas," *Physics Reports* **121** Nos. 1&2, 1–167 (1985).
- 20) J.D. Hanson, J. R. Cary, and J.D. Meiss, "Algebraic Decay in Self-Similar Markov Chains," *Journal of Statistical Physics* **39**, 327–345 (1985).
- 21) W. Horton, J. Liu, J.D. Meiss, and J.E. Sedlak, "Solitary Vortices in a Rotating Plasma," *Physics of Fluids* **29**, 1004–1010 (1986).
- 22) J.D. Meiss, "Transport Near the Onset of Stochasticity," *Journal of Particle Accelerators* **19**, 9–24 (1986).
- 23) R.D. Hazeltine, J.D. Meiss, and P.J. Morrison, "Analytical Theory of the Nonlinear  $m=1$  Tearing Mode," *Physics of Fluids* **29**, 1633–1639 (1986).
- 24) J.D. Meiss and E. Ott, "Markov-Tree Model of Intrinsic Transport in Hamiltonian Systems," *Phys. Rev Letters* **55**, 2741–2744 (1985).
- 25) J.D. Meiss and E. Ott, "Markov Tree Model of Transport in Area-Preserving Maps," *Physica D* **20**, 387–402 (1986).
- 26) R.S. MacKay and J.D. Meiss, "Flux and Differences in Action in Continuous Time Hamiltonian Systems," *Journal of Physics A* **19**, L225–L229 (1986).
- 27) V. V. Mirnov, J.D. Meiss and J. L. Tennyson, "Relaxation to the Steady State in Neutral-Beam Injected Mirrors," *Physics of Fluids* **29**, 3740–3748 (1986).
- 28) J.D. Meiss, "Class Renormalization: Islands around Islands," *Physical Review* **34A**, 2375–2383 (1986).
- 29) A. Aydemir, R.D. Hazeltine, J.D. Meiss, and M. Kotschenreuther, "Destabilization of Alfvén-Resonant Modes by Resistivity and Diamagnetic Drifts," *Physics of Fluids* **30**, 4–6 (1987).

- 30) R.S. MacKay, J.D. Meiss, and I.C. Percival, “Resonances in Area Preserving Maps,” *Physica D* **27**, 1–20 (1987).
- 31) J.D. Meiss, “Transport Near the Onset of Chaos,” *Physics Today*, *Physics News* of 1986, January (1987).
- 32) Q. Chen, J.D. Meiss, and I.C. Percival, “Orbit Extension Method for Finding Unstable Orbits,” *Physica D* **29**, 143–154 (1987).
- 33) R.S. MacKay and J.D. Meiss, “The Relation between Quantum and Classical Thresholds for Multi-photon Ionization of Excited Atoms,” *Physical Review* **37A**, 4702–4706 (1988).
- 34) Q. Chen and J.D. Meiss, “Flux, Resonances and the Devil’s Staircase for the Sawtooth Map,” *Nonlinearity* **2**, 347–356 (1988).
- 35) H.T. Kook and J.D. Meiss, “Periodic Orbits for Reversible, Symplectic Mappings,” *Physica D* **35**, 65–86 (1989).
- 36) J.D. Meiss, “Comment on Microwave Ionization of H-atoms: breakdown of classical dynamics for high frequencies,” *Physical Review Letters* **62**, 1576 (1989).
- 37) H.T. Kook and J.D. Meiss, “Application of Newton’s Method to Lagrangian Dynamical Systems,” *Physica D* **36**, 317–326 (1989).
- 38) R.S. MacKay, J.D. Meiss, and J. Stark, “Converse KAM Theory for Symplectic Twist Maps,” *Nonlinearity* **2**, 555–570 (1989).
- 39) H.T. Kook and J.D. Meiss, “Diffusion in Symplectic Maps,” *Physical Review A*, **41**, 4143–4150 (1990).
- 40) J.D. Meiss and R.D. Hazeltine, “Canonical Coordinates for Guiding Center Particles,” *Physics of Fluids*, **B2** 2563–2567 (1990).
- 41) Q. Chen, I. Dana, J.D. Meiss, N.W. Murray, and I.C. Percival, “Resonances and Transport in the Sawtooth Map,” *Physica D*, **46** 217–240 (1990).
- 42) Q. Chen, R.S. MacKay, and J.D. Meiss, “Cantori for Symplectic Maps,” *Journal of Physics A* **23** L1093–L1100 (1990).
- 43) R.S. MacKay and J.D. Meiss, “Cantori for Symplectic Maps near the Anti-integrable Limit,” *Nonlinearity* **5**, 149–160 (1992).
- 44) J.D. Meiss, “Symplectic Maps, Variational Principles and Transport,” *Reviews of Modern Physics*, **64** 795–848 (1992).
- 45) J.D. Meiss, “Cantori for the Stadium Billiard,” *Chaos* **2** 267–272 (1992).

- 46) R.L. Dewar and J.D. Meiss, “Flux-Minimizing Curves for Reversible Area-Preserving Maps,” *Physica D*, **57** 476–502 (1992).
- 47) R.E. Easton, J.D. Meiss, and S. Carver, “Exit Times and Transport for Symplectic Twist Maps,” *Chaos* **3** 153–165 (1993).
- 48) E. Bolitt and J.D. Meiss, “Break-up of Invariant Tori for the Four Dimensional Semi-standard Map,” *Physica D* **66** 282–297 (1993).
- 49) J. L. Tennyson, J.D. Meiss and P. J. Morrison, “Self-Consistent Chaos in the Beam-Plasma Instability,” *Physica D* **71** 1–17 (1994).
- 50) J.D. Meiss, “Transient Measures for the Standard Map,” *Physica D* **74**, 254–267 (1994).
- 51) R.S. MacKay, J.D. Meiss, and J. Stark, “An Approximate Renormalization for the Break-up of Invariant Tori with Three Frequencies,” *Physics Lett. A* **190** 417–424 (1994).
- 52) E. Bolitt and J.D. Meiss, “Controlling Transport through Recurrences,” *Physica D* **81** 280–294, 1995.
- 53) T. Hayashi, T. Sato, H.J. Gardner and J.D. Meiss, “Evolution of Magnetic Islands in a Helic,” *Physics of Plasmas*, **2** 752–775, 1995.
- 54) E. Bolitt and J.D. Meiss, “Targeting Chaotic Orbits to the Moon through Recurrence,” *Phys. Lett. A*, **204** 373–383, 1995.
- 55) J.D. Meiss, “Average Exit, Times for Volume Preserving Maps” *Chaos*, **7** 139–147 1997.
- 56) D. Sterling and J.D. Meiss, “Computing Periodic Orbits using the Anti-Integrable Limit,” *Physics Letters A* **241**, 46–52 (1998).
- 57) H.E. Lomelí and J.D. Meiss, “Quadratic Volume Preserving Maps,” *Nonlinearity* **11**, 557–574 (1998).
- 58) V. Robins, J.D. Meiss and E. Bradley, “Computing Connectedness: an Exercise in Computational Topology,” *Nonlinearity* **11**, 913–922 (1998).
- 59) H.R. Dullin and J.D. Meiss, “Stability of Minimal Periodic Orbits,” *Phys. Lett. A* **247**, 227–324 (1998).
- 60) K.E. Lenz, H.E. Lomelí and J.D. Meiss, “Quadratic Volume Preserving Maps: an Extension of a Result of Moser,” *Regular and Chaotic Dynamics* **3**, 122–130 (1999).
- 61) D. Sterling, H.R. Dullin and J.D. Meiss, “Homoclinic Bifurcations for the Hénon Map,” *Physica D* **134** 153–184 (1999).
- 62) H.R. Dullin, J.D. Meiss, and D. Sterling, “Generic Twistless Bifurcations,” *Nonlinearity* **13**, 203–224 (2000).

- 63) H.E. Lomelí and J.D. Meiss, “Heteroclinic Primary Intersections and Codimension one Melnikov Method for Volume Preserving Maps,” *Chaos* **10**, 109–121 (1999).
- 64) V. Robins, J.D. Meiss, and L. Bradley, “Computing Connectedness: Disconnectedness and Discreteness” *Physica D* **139**, 276–300 (2000).
- 65) H.E. Lomelí and J.D. Meiss, “Heteroclinic Orbits and Transport in a Perturbed Integrable Suris Map,” *Physics Letters A* **269** (5/6) 309–318 (2000).
- 66) H.R. Dullin, and J.D. Meiss, “Generalized Hénon Maps: the Cubic Polynomial Diffeomorphisms of the Plane.” *Physica D* **143**(1–4): 262–289 (2000).
- 67) H.R. Dullin, D. Sterling and J.D. Meiss “Self-Rotation Number using the Turning Angle.” *Physica D* **145** (1–2): 25–46 (2000).
- 68) R.W. Easton, J.D. Meiss, and G. Roberts, “Drift by Coupling to an Anti-Integrable Limit,” *Physica D*, **156** 201–218 (2001).
- 69) A. Gomez and J.D. Meiss, “Volume Preserving Maps with an Invariant,” *Chaos* **12** 289–299 (2002).
- 70) H.R. Dullin, and J.D. Meiss, “Twist Singularities for Symplectic Maps,” *Chaos* **13** 1–16 (2003).
- 71) A. Gomez and J.D. Meiss, “Reversible Polynomial Automorphisms in the Plane: the Involutory Case,” *Physics Letters A* **312** 49–58 (2003).
- 72) H.E. Lomelí and J.D. Meiss, “Heteroclinic Orbits between Invariant Circles in Volume Preserving Mappings,” *Nonlinearity* **16** 1573–1595 (2003).
- 73) A. Gomez and J.D. Meiss, “Reversors and Symmetries for Polynomial Automorphisms of the Complex Plane,” *Nonlinearity* **17** 975–1000 (2004).
- 74) P. Mullowney, K. Julien and J.D. Meiss, “Blinking rolls: chaotic advection in a 3D flow with an Invariant,” *SIAM J. Dynamical Systems* **4** 159–186 (2005)
- 75) H.R. Dullin, J.D. Meiss, and D. Sterling, “Symbolic Codes for Rotational Orbits,” *SIAM J. Appl. Dyn. Sys.* **4** 515–562 (2005).
- 76) H.R. Dullin, A.V. Ivanov, and J.D. Meiss, “Normal forms for 4D Symplectic Maps with Twist Singularities,” *Physica D* **215** 175–190 (2006).
- 77) D.B. Wysham and J.D. Meiss, “Iterative Techniques for Computing the Linearized Manifolds of Quasiperiodic Tori,” *Chaos* **16** 023129 (2006).
- 78) S.V. Gonchenko, J.D. Meiss, and I.I. Ovsyannikov “Chaotic dynamics of three-dimensional Hénon maps that originate from a homoclinic bifurcation,” *Regular and Chaotic Dynamics* **11**(2) 191–212 (2006).

- 79) D.J.W. Simpson and J.D. Meiss, “Andronov-Hopf Bifurcations in Planar, Piecewise-Smooth, Continuous Flows,” *Phys. Lett. A* **371**(3) 213–220 (2007).
- 80) H.E. Lomelí, J.D. Meiss, and R. Ramírez-Ros, “Canonical Melnikov Theory for Diffeomorphisms,” *Nonlinearity* **21** 485–508 (2008).
- 81) H.R. Dullin and J.D. Meiss, “Nilpotent Normal form for Divergence Free Vector Fields and Volume-Preserving Maps,” *Physica D* **237**(2) 156–166 (2008).
- 82) P. Muldowney, K. Julien, and J.D. Meiss, “Chaotic Advection in the Küppers-Lortz State,” *Chaos* **18**, 033104 (2008).
- 83) J.D. Meiss, “Visual Explorations of Dynamics: the Standard Mapping,” *Pramana, Indian Academy of Sciences* **70** 965–988 (2008).
- 84) D.J.W. Simpson and J.D. Meiss, “Neimark-Sacker Bifurcations in Planar, Piecewise Smooth, Continuous Maps,” *SIAM J. Appl. Dyn. Sys.* **7**(3) 795–824 (2008)
- 85) D.J.W. Simpson and J.D. Meiss, “Unfolding a Codimension-Two Discontinuous Hopf Bifurcation,” *Chaos* **18** 033125 (2008).
- 86) H.E. Lomelí and J.D. Meiss, “Generating Forms for Exact Volume-Preserving Maps,” *Discrete and Continuous Dynamical Systems Series S* **2**(2) 361–277 (2009).
- 87) H.R. Dullin and J.D. Meiss, “Quadratic Volume Preserving Maps: Invariant Circles and Bifurcations,” *SIAM J. Appl. Dyn. Sys.* **8**(1) 76–128 (2009).
- 88) D.J.W. Simpson, D.S. Kompala, and J.D. Meiss, “Discontinuity Induced Bifurcations in a Model of *Saccharomyces Cerevisiae*,” *Math. Biosci.* **218** 40–49 (2009).
- 89) D.J.W. Simpson and J.D. Meiss, “Shrinking Point Bifurcations of Resonance Tongues for Piecewise-Smooth, Continuous Maps,” *Nonlinearity* **22** 1123–1144 (2009).
- 90) H.E. Lomelí, and J.D. Meiss, “Resonance Zones and Lobe Volumes for Volume-Preserving Maps,” *Nonlinearity* **22** 1761–1789 (2009).
- 91) J. Howard and J.D. Meiss, “Straight Line Orbits in Hamiltonian Flows,” *Celestial Mechanics and Dynamical Astronomy* **105**(4) 337–252 (2009).
- 92) D.J.W. Simpson and J.D. Meiss, “Simultaneous Border-Collision and Period-Doubling Bifurcations,” *Chaos* **19**(3) 033146 (2009).
- 93) D.J.W. Simpson and J.D. Meiss, “Resonance near Border-Collision Bifurcations in Piecewise-Smooth, Continuous Maps,” *Nonlinearity* **23** 3091–3118 (2010).
- 94) M. Gidea, J.D. Meiss, I. Ugarcovici, H. Weiss, “Applications of KAM Theory to Population Dynamics,” *J. Biological Dynamics* **5**(1) 44–63 (2011).

- 95) B.A. Mosovsky and J.D. Meiss, “Transport in Transitory Dynamical Systems,” SIAM J. Dyn. Sys. **10**(1) 35–65 (2011).
- 96) D.J.W. Simpson and J.D. Meiss, “Aspects of Bifurcation Theory for Piecewise-Smooth, Continuous Systems,” Physica D, **241**(22) 1861–1868 (2012).
- 97) H.R. Dullin and J.D. Meiss, “Resonances and Twist in Volume-Preserving Maps,” SIAM J. Dyn. Systems **11** 319–359 (2012).
- 98) J.D. Meiss, “The Destruction of Tori in Volume-Preserving Maps,” Comm. Nonl. Sci. and Num. Simul., **17** 2108–2121 (2012).
- 99) Z. Alexander, J.D. Meiss, E. Bradley, and J. Garland, “Iterated Function System Models in Data Analysis: Detection and Separation,” Chaos **22**(2) 023103 (2012).
- 100) H.R. Dullin, H.E. Lomelí and J.D. Meiss, “Symmetry Reduction by Lifting for Maps,” Nonlinearity **25** 1709–1733 (2012).
- 101) B.A. Mosovsky and J.D. Meiss, “Transport in Transitory, Three-Dimensional, Liouville Flows,” SIAM J. Dyn. Sys. **11**(4) 1785–1816 (2012).
- 102) A.M. Fox and J.D. Meiss, “Greene’s Criterion for the Break-up of Tori in Volume-Preserving Maps,” Physica D **243**(1) 45–63 (2013).
- 103) B.A. Mosovsky, M.F.M. Speetjens, and J.D. Meiss, “Finite-Time Transport in Volume-Preserving Flows,” Phys. Rev. Lett. **110**(21): 214101 (2013).
- 104) A.M. Fox and J.D. Meiss, “Critical Invariant Circles in Asymmetric and Multiharmonic Generalized Standard Maps,” Comm. Nonl. Sci. and Num. Simul. **19**(4) 1004–1026 (2014).
- 105) R.M. Neupauer, J.D. Meiss, and D. C. Mays, “Chaotic advection and reaction during engineered injection and extraction in heterogeneous porous media,” Water Resources Res. **50**: 1433-1447 (2014).
- 106) J.G. Restrepo and J.D. Meiss, “Onset of Synchronization in the Disordered Hamiltonian Mean Field Model,” Phys. Rev. E **89**(5): 052125 (2014).
- 107) O. Alus, S. Fishman, and J.D. Meiss, “Statistics of the Island-Around-Island Hierarchy in Hamiltonian Phase Space,” Phys. Rev. E **90**(6): 062923 (2014).
- 108) K. Pratt, J.D. Meiss, and J. Crimaldi, “Reaction Enhancement of Initially Distant Scalars by Lagrangian Coherent Structures,” Phys. Fluids **27**: 035106 (2015).
- 109) J.D. Meiss, “Thirty Years of Turnstiles and Transport,” Chaos **25**(9): 097602 (2015).
- 110) Z. Alexander, L. Bradley, J.D. Meiss, and N. Sanderson, “Simplicial Multivalued Maps and the Witness Complex for Dynamical Analysis of Time Series,” SIAM J. Dyn. Sys., **14**(3) 1278-1307 (2015).

- 111) Y.S. Virkar,, J. G. Restrepo and J. D. Meiss, “Hamiltonian mean field model: Effect of network structure on synchronization dynamics.” *Physical Review E* **92**(5): 052802 (2015).
- 112) L.M. Lerman and J.D. Meiss, “Mixed Dynamics in a Parabolic Standard Map,” *Physica D* **315** 58-71 (2016).
- 113) A.M. Fox and J.D. Meiss, “Computing the Conjugacy of Invariant Tori for Volume-Preserving Maps,” *SIAM J. Dyn. Sys.*, **15**(1) 557-579 (2016).
- 114) J. Garland, E. Bradley and J.D. Meiss, “Exploring the Topology of Dynamical Reconstructions,” *Physica D* **334**(1) 48-59 (2016).
- 115) O. Alus, S. Fishman, and J.D. Meiss, “Probing the statistics of transport in the Hénon Map,” *European Phys. J. Special Topics* **225**(5) 1181-1186 (2016).
- 116) R.A. Mitchell and J.D. Meiss, “Designing a Finite-Time Mixer: Optimizing Stirring for Two-Dimensional Maps,” *SIAM J. Dyn. Systems* **16**(3) 1514-1542 (2017).
- 117) O. Alus, S. Fishman, and J.D. Meiss, “Universal Exponent for Transport in Mixed Hamiltonian Dynamics,” *Phys. Rev. E* **96**(3) 032204 (2017).
- 118) N. Guillery and J.D. Meiss, “Diffusion and Drift in Volume-Preserving Maps,” *Reg. Chaotic Dyn.* **22**(6): 700-720 (2017).
- 119) J.D. Meiss, N. Miguel, C. Simó, A. Viero, “Accelerator Modes and Anomalous Diffusion in 3D Volume-Preserving Maps,” *Nonlinearity* **31**(12) 5615-5642 (2018).
- 120) A. Bäcker and J.D. Meiss, “Moser’s Quadratic, Symplectic Map,” *Reg. Chaotic Dyn.* **23**(6) 654-664 (2018).
- 121) H.R. Dullin, J. Worthington and J.D. Meiss, “Poisson Structure of the Three-Dimensional Euler Equations,” *J. Phys. A.* **52**(36), 365501 (2019).
- 122) A. Bäcker and J.D. Meiss, “Elliptic Bubbles in Moser’s 4D Quadratic Map: the Quadfurcation,” *SIAM J. Dyn. Sys.* **19**(1) 442-479 (2020).
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- 124) E. Sander and J.D. Meiss, “Birkhoff Averages and Rotational Invariant Circles for Area-Preserving Maps,” *Physica D* **411** 132569 (2020).
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