

Publications of Ulrich Mutze

1. On the Casimir Operators Associated with Any Lie Algebra
Z. Physik 229, 224-229 (1969)
2. Diskrete Symmetrien Relativistischer Teilchensysteme
Dissertation, München 1971, 115 S. Maschinenschrift
3. Unified Free Quantum Fields for Massive and for Massless Particles
Fortschritte der Physik 23, 113-131 (1975)
4. A no-go theorem concerning the cluster decomposition property of direct-interaction scattering theories
J. Math. Phys. 19, 231-236 (1978)
5. Position operators for the relativistic non-interacting n-particle system
J. Phys. A 11, 665-677 (1978)
6. On the Irreducible Representations of Groups That Contain a Subgroup of Index two. Commun. Math. Phys. 59, 267-271 (1978)
http://projecteuclid.org/DPubS/Repository/1.0/Disseminate?view=body&id=pdf_1&handle=euclid.cmp/1103901662
7. On the irreducible representations of groups containing a subgroup of finite index (together with D. P. L. Castrigiano)
J. Math. Phys. 21 955-960 (1980)
8. A covariant description of particle position (together with D. P. L. Castrigiano)
Phys. Rev. D 26, 3499-3505 (1982)
9. Relativistic quantum mechanics of n-particle systems with cluster separable interactions
Phys. Rev. D 29, 2255-2269 (1984)
10. Repeated measurements in quantum theory (together with D. P. L. Castrigiano)
Phys. Rev. A 30, 2210-2220 (1984)
11. On the commutant of an irreducible set of operators in real Hilbert space (together with D. P. L. Castrigiano)
J. Math. Phys. 26, 1107-1110 (1985)

12. Predicting Classical Motion Directly from the Action Principle II (1999)
http://www.ma.utexas.edu/mp_arc/c/99/99-271.pdf
13. Predicting Classical Motion Directly from the Action Principle III (2001)
<http://www.ulrichmutze.de/articles/01-166.ps>
14. A Simple Variational Integrator for General Holonomic Mechanical Systems (2003)
http://www.ma.utexas.edu/mp_arc/c/03/03-491.pdf
15. The Fundamental Theorem of Calculus in R^n (2004)
http://www.ma.utexas.edu/mp_arc/c/04/04-165.pdf
16. Quaternions - Redundancy + Efficiency = Ternions (2005)
http://www.ma.utexas.edu/mp_arc/c/05/05-53.pdf
17. Rigidly connected overlapping spherical particles: a versatile grain model Granular Matter, Vol 8, Numbers 3-4, pp. 185-194 (2006)
18. The direct midpoint method as a quantum mechanical integrator (2006)
http://www.ma.utexas.edu/mp_arc/c/06/06-356.pdf
19. The direct midpoint method as a quantum mechanical integrator II (2007)
http://www.ma.utexas.edu/mp_arc/c/07/07-176.pdf
20. Polyspherical grains and their dynamics (2007)
http://www.ma.utexas.edu/mp_arc/c/07/07-252.pdf
21. Separated quantum dynamics (2008)
http://www.ma.utexas.edu/mp_arc/c/08/08-69.pdf
22. An asynchronous leap-frog method (2008)
http://www.ma.utexas.edu/mp_arc/c/08/08-197.pdf
23. Quantum Image Dynamics - an entertainment application of separated quantum dynamics (2008)
http://www.ma.utexas.edu/mp_arc/c/08/08-199.pdf
24. Precision-dependent symmetry breaking in simulated motion of polyspherical grains (2009)
http://www.ma.utexas.edu/mp_arc/c/09/09-113.pdf
25. "Leaking Bucket Equation and Reversibility" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/LeakingBucketEquationAndReversibility/>
 Contributed by: Ulrich Mutze (published 2010-05-18, submitted 2010-01-22)
26. "Testing an Intuitive Random Generator with the Task of Emptying a Cube" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/TestingAnIntuitiveRandomGeneratorWithTheTaskOfEmptyingACube/>
 Contributed by: Ulrich Mutze (published 2010-06-15)

27. Higher-dimensional antiderivatives and the efficient computation of electrostatic potentials (2010)
http://www.ma.utexas.edu/mp_arc/c/10/10-110.pdf
28. "Integrating "Beyond Infinity" and Back" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/IntegratingBeyondInfinityAndBack/>
Contributed by: Ulrich Mutze (published 2010-08-14)
29. "Integrating across Singularities" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/IntegratingAcrossSingularities/>
Contributed by: Ulrich Mutze (published 2010-08-25)
30. "Comparing Leapfrog Methods with Other Numerical Methods for Differential Equations" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/ComparingLeapfrogMethodsWithOtherNumericalMethodsForDifferen/>
Contributed by: Ulrich Mutze (published 2010-09-30)
31. "Smoothly Interpolating a Set of Data" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/SmoothlyInterpolatingASetOfData/>
Contributed by: Ulrich Mutze (published 2010-11-05)
32. "Quantum Dynamics in 1D" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/QuantumDynamicsIn1D/>
Contributed by: Ulrich Mutze (published 2010-12-10)
33. "Lens Aberrations" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/LensAberrations/>
Contributed by: Ulrich Mutze (published 2011-01-18)
34. "The Uranus Puzzle" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/TheUranusPuzzle/>
Contributed by: Ulrich Mutze (published 2011-03-17)
35. "Relativistic Quantum Dynamics in 1D and the Klein Paradox" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/RelativisticQuantumDynamicsIn1DAndTheKleinParadox/>
Contributed by: Ulrich Mutze (published 2011-04-28)
36. "On the Stability Limit of Leapfrog Methods" from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/OnTheStabilityLimitOfLeapfrogMethods/>
Contributed by: Ulrich Mutze (published 2011-09-07)
37. "Approach of a System of Particles towards Thermal Equilibrium" from The Wolfram Demonstrations Project.

- <http://demonstrations.wolfram.com/ApproachOfASystemOfParticlesTowardsThermalEquilibrium/>
Contributed by: Ulrich Mutze and Stephan Leibbrandt (published 2012-03-08)
38. “Time Evolution of a Symmetric System” from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/TimeEvolutionOfASymmetricSystem/>
Contributed by: Ulrich Mutze (published 2012-04-23)
39. “Model for Crystallization in 2D” from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/ModelForCrystallizationIn2D/>
Contributed by: Ulrich Mutze (published 2012-12-04)
40. “The Asynchronous Leapfrog Method as a Stiff ODE Solver” from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/TheAsynchronousLeapfrogMethodAsAStiffODESolver/>
Contributed by: Ulrich Mutze (published 2013-05-22)
41. “Contracting the Double Twist in $SO(3)$ ” from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/ContractingTheDoubleTwistInSO3/>
Contributed by: Ulrich Mutze (published 2013-05-22)
42. “The Gravitational Two-Body Problem in the Einstein-Infeld-Hoffmann Approximation” from The Wolfram Demonstrations Project.
<http://demonstrations.wolfram.com/TheGravitationalTwoBodyProblemInTheEinsteinInfeldHoffmannApp/>
Contributed by: Ulrich Mutze (published 2013-07-09)
43. An asynchronous leapfrog method II (2013)
<http://www.arxiv.org/abs/1311.6602>
44. ”Swingboat Ride”
<http://demonstrations.wolfram.com/SwingboatRide/>
Wolfram Demonstrations Project
Contributed by: Ulrich Mutze (published: April 17, 2014)
45. ”Eigenfunctions of a 1D Quantum System with Adjustable Potential”
<http://demonstrations.wolfram.com/EigenfunctionsOfA1DQuantumSystemWithAdjustablePotential/>
Wolfram Demonstrations Project
Contributed by: Ulrich Mutze (published: January 16, 2015)
46. “Monte Carlo Simulation Of Two-Electron Spin Correlations”
<http://demonstrations.wolfram.com/MonteCarloSimulationOfTwoElectronSpinCorrelations/>
Wolfram Demonstrations Project
Published: April 20, 2015
47. “Iteration Methods for Solving Kepler’s Equation”
<http://demonstrations.wolfram.com/IterationMethodsForSolvingKeplersEquation/>

- Wolfram Demonstrations Project
Published: June 24, 2015
48. “Standard Colorimetric Observer Color-Matching Functions”
<http://demonstrations.wolfram.com/StandardColorimetricObserverColorMatchingFunctions/>
Wolfram Demonstrations Project
Published: July 10, 2015
 49. “The Thomson Problem with Central Forces”
<http://demonstrations.wolfram.com/TheThomsonProblemWithCentralForcesFunctions/>
Wolfram Demonstrations Project
Published: September 21, 2015
 50. “Testing Second-Order Integrators for Motion of a Charge in a Homogeneous Magnetic Field”
<http://demonstrations.wolfram.com/TestingSecondOrderIntegratorsForMotionOfAChargeInAHomogeneou/>
Wolfram Demonstrations Project
Published: June 24, 2016
 51. “Simulating Real Gases in 2D”
<http://demonstrations.wolfram.com/SimulatingRealGasesIn2D/>
Wolfram Demonstrations Project
Published: December 6, 2016
 52. On a deterministic disguise of orthodox quantum mechanics (2017)
<http://www.arxiv.org/abs/1701.07236>