

PUBLICATIONS

CAROLINE LASSER

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BOOKS

- [1] *Erste Hilfe in Linearer Algebra*, with O. Deiser, Springer Spektrum, 2015.
- [2] *12 × 12 Schlüsselkonzepte zur Mathematik*, with O. Deiser, E. Vogt, and D. Werner, Springer Spektrum, (2011, 2nd edition 2016)

PEER-REVIEWED JOURNALS IN MATHEMATICS

- [1] *Non-Hermitian propagation of Hagedorn wavepackets*, with R. Schubert and S. Troppmann, J. Math. Phys. 59, 2018, 082102 (35 pp.).
- [2] *Symmetric Kronecker products and semiclassical wave packets*, with G. Hagedorn, SIAM J. Matr. An. 38(4), 2018, pp. 1560–1579.
- [3] *Discretising the Herman–Kluk propagator*, with D. Sattlegger, Num. Math. 137(1), 2017, pp. 119–157.
- [4] *An Egorov Theorem for avoided crossings of eigenvalue surfaces*, with C. Fermanian Kammerer, Comm. Math. Phys. 353(3), 2017, pp. 1011–1057.
- [5] *A new phase space density for quantum expectations*, with J. Keller, T. Oh-sawa, SIAM J. Math. An. 48(1), 2016, pp. 513–537.
- [6] *Corrections to Wigner type phase space methods*, with W. Gaim, Nonlinearity 27, 2014, pp. 2951–2974.
- [7] *Hagedorn wavepackets in time-frequency and phase space*, with S. Troppmann, J. Fourier An. Appl. 20, 2014, pp. 679–714.
- [8] *Propagation of quantum expectations with Husimi functions*, with J. Keller, SIAM J. Appl. Math. 73, 2013, pp. 1557–1581.
- [9] *Wigner measure propagation and conical singularity for general initial data*, with C. Fermanian Kammerer, P. Gérard, Arch. Rat. Mech. An. 209, 2013, pp. 209–236.
- [10] *Computing expectation values for molecular quantum dynamics*, with S. Röblitz, SIAM J. Sci. Comput. 32, 2010, pp. 1465–1483.

- [11] *Semiclassical resonances for a two-level Schrödinger operator with a conical intersection*, with S. Fujiie and L. Nédélec, *Asymp. An.* 65, 2009, pp. 17–58.
- [12] *Monte Carlo sampling of Wigner functions and surface hopping quantum dynamics*, with S. Kube and M. Weber, *J. Comput. Phys.* 228, 2009, pp. 1947–1962.
- [13] *Propagation through generic level crossings: a surface hopping semigroup*, with C. Fermanian-Kammerer, *SIAM J. Math. An.* 40(1), 2008, pp. 103–133.
- [14] *A rigorous surface hopping algorithm for conical crossings*, with T. Swart and S. Teufel, *Commun. Math. Sc.* 5(4), 2007, pp. 789–814.
- [15] *Propagation through conical crossings: an asymptotic semigroup*, with S. Teufel, *Comm. Pure Appl. Math.* 58(9), 2005, pp. 1188–1230.
- [16] *Wigner measures and codimension two crossings*, with C. Fermanian Kammerer, *J. Math. Phys.* 44(2), 2003, pp. 507–527.
- [17] *An overlapping domain decomposition preconditioner for a class of discontinuous Galerkin approximations of advection-diffusion problems*, with A. Toselli, *Math. Comp.* 72, 2003, pp. 1215–1238.

PEER-REVIEWED JOURNALS IN CHEMISTRY/PHYSICS

- [1] *Nonadiabatic nuclear dynamics of the ammonia cation studied by surface hopping classical trajectory calculations*, with A. Belyaev, W. Domcke, G. Trigila, *J. Chem. Phys.* 142, 2015, 104307 (10 pp.)
- [2] *Quasi-classical description of molecular dynamics based on Egorov’s theorem*, with J. Keller, *J. Chem. Phys.* 141, 2014, 054104 (11 pp.)
- [3] *Landau-Zener type surface hopping algorithms* with A. Belyaev and G. Trigila, *J. Chem. Phys.* 140, 2014, 224108, (11 pp.)
- [4] *Single switch surface hopping for molecular quantum dynamics* with C. Fermanian Kammerer, *J. Math. Chem.* 50(3), 2012, pp. 620–635.
- [5] *Initial state dependence of coupled electronic and nuclear fluxes in molecules* with A. Kenfack, F. Marquardt, G. Paramonov, I. Barth, B. Paulus, *Phys. Rev. A* 81, 2010, 052502, (7 pp.)
- [6] *Trigonometric pulse envelopes for laser induced quantum dynamics*, with I. Barth, *J. Phys. B: At. Mol. Opt. Phys.* 42, 2009, 235101 (8 pp.)
- [7] *Single switch surface hopping for a model of pyrazine*, with T. Swart, *J. Chem. Phys.* 129, 2008, 034302 (8 pp.)
- [8] *Single switch surface hopping for molecular dynamics with transitions*, with C. Fermanian Kammerer, *J. Chem. Phys.* 128, 2008, 144102 (9 pp.)

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- [1] *Adiabatic approximation for quantum systems responding to laser pulses*, Classical and Quantum Mechanical Models of Many-Particle Systems (ed. A. Arnold, C. Cercignani, L. Desvillettes), Oberwolfach Report 54, 2006, p. 3249.
- [2] *Energy level crossings in molecular dynamics*, with F. Bornemann and T. Swart, Analysis, Modeling, and Simulation of Multiscale Problems (ed. A. Mielke), 2006, pp. 581–598.
- [3] *Laser control of nuclear and electron dynamics: bond selective photodissociation and electron circulation*, with I. Barth, L. González, J. Manz, and T. Rozgonyi, Coherent Control of Molecules CCP6, (ed. B. Lasorne and G. A. Worth), 2006, pp. 18–27.
- [4] *Convergence of some two-level overlapping domain decomposition preconditioners with smoothed aggregation coarse spaces*, with A. Toselli, Recent Developments in Domain Decomposition Methods, Lecture Notes in Computational Science and Engineering **23**, 2002, pp. 95–117.
- [5] *Overlapping preconditioners for discontinuous Galerkin approximations of second order problems*, with A. Toselli, Proceedings of the 13th International Conference of Domain Decomposition, 2001.

DISSERTATION

- [1] *Conical crossings in molecular dynamics*, PhD thesis at Technische Universität München, June 2004.