

PROF. Dr. PETER. A. MARKOWICH PUBLICATIONS

BOOKS

- B7 Y. Giga, P. Kloeden, I. Lasiecka, P.A. Markowich, E. Rocca, E. Valdinoci, E. Zuazua, K. Cieplinski, *Special Issue on PDEs and their Applications at DEA 2019, preface*, DCDS-Series B, Vol. 25, Issue 10, 2020
- B6 P.A. Markowich, *Applied Partial Differential Equations: A Visual Approach*, Springer Verlag, Wien-New York, 2006
- B5 P. Marcati, P.A. Markowich and R. Natalini (Editors), *Mathematical Problems in Semiconductor Physics*, Pitman Res. Notes in Math. Series, No. 340, 1995
- B4 A. Decoster, P.A. Markowich, B. Perthame, P.-A. Raviart (ed), *Modeling of Collisions. Summer School, Saint Malo, France, September 1994*, Series in Appl. Math. (Paris), Gauthier-Villars/North Holland, 1994
- B3 L. Arkeryd, P.-L. Lions, P.A. Markowich and S.R.S. Varadhan, Editors, *Nonequilibrium Problems in Many-Particle Systems*, Lecture Notes, in Mathematics 1551, Springer-Verlag, 1993
- B2 P.A. Markowich, C. Ringhofer and C. Schmeiser, *Semiconductor Equations*, Springer Verlag Wien, New York, 1990
- B1 P.A. Markowich, *The Stationary Semiconductor Device Equations*, Springer Verlag, Wien-New York, 1986

SCIENTIFIC PAPERS IN REFEREED JOURNALS

- R190 N. Alves, P. Markowich and A. Tzavaras, *Analytic Solutions for Vlasov Equations with Nonlinear Zero-Moment Dependence*, submitted, 2024
- R189 P. Markowich and S. Portaro, *PDE models for Deep Neural Networks: Learning Theory, Calculus of Variations and Optimal Control*, submitted, 2024
- R188 C. Astuto, P. Markowich, S. Portaro, G. Russo, *Self-regulated Biological Transportation Structures with general Entropy Dissipation: 2D Case and Leaf-shaped Domain*, submitted 2024
- R187 R. Al Jahdali, M. Parsani, D. C. Del Rey Fernandez, L. Dalcin, M. Sayyari, P. Markowich, M. Parsani, *Fully discrete Lyapunov-stable Discretizations for parabolic Reaction-Diffusion Equations with r Species*, Comm. Appl. Math. Comp., <https://doi.org/10.1007/s42967-024-00425-7>, 2024

- R186 J. Haskovec, P. Markowich and S. Portaro, Measure-Based Approach to Mesoscopic Modeling of Optimal Transportation Networks. accepted in EMS Special Issue for Nina Uraltseva , 2024
- R185 C. Astuto, J. Haskovec, P. Markowich and S. Portaro, *Self-regulated biological Transportation Structures with General Entropy Dissipations, Part 1 : The 1d Case*, Journal of Dynamics and Games, Vol. 11, Nr. 1, 2024
- R184 D. Amadori, B. Andreianov, M. Di Francesco, S. Fagioli, T. Girard, P. Goatin, P. Markowich, J.-F. Pietschmann, M.D. Rosini, G. Russo, G. Stivaletta and M.T. Wolfram, *The Mathematical Theory of Hughes' Model: a Survey of Results*, Crowd Dynamics, Vol 4, pp 9-53, 2023
- R183 C. Astuto, D. Boffi, J.Haskovec, P. Markowich and G. Russo, *Asymmetry and Condition Number of an Elliptic-Parabolic System for Biological Network Formation*, Communications on Applied Mathematics and Computation, 2023 <https://doi.org/10.1007/s42967-023-00297-3>
- R182 J. Haskovec, P.A. Markowich and S. Portaro, *Emergence of Biological Transportation Networks as a Self-Regulated Process*, Discrete and Continuous Dynamical Systems, Vol 43, Nr. 3 and 4, pp 1499-1515, 2023
- R181 J. Haskovec, P.A. Markowich and G. Pilli, *Tensor PDE Model of Biological Network Formation*, CMS, Vol. 20, Issue 4, pp 1173-1191, 2022
- R180 H. Liu and P.A. Markowich, *Selection Dynamics for Deep Neural Networks*, JDE, Vol. 269, Issue 12, pp 11540-11574, 2020
- R179 P. Antonelli, P.A. Markowich, R. Obermeyer, J. Sierra, C. Sparber, *On a Dissipative Gross-Pitaevskii-Type Model for Exciton-Polariton Condensates*, Nonlinearity, Vol. 32, Issue 11, pp 4317-4345, 2019
- R178 J. Haskovec, H. Jönsson, L.M. Kreusser, P.A. Markowich, *Auxin Transport Model for Leaf Venation*, Proceedings A of the Roy. Soc., Vol. 475, Issue 2231, 2019
- R177 J. Haskovec, P.A. Markowich, G. Pilli, *Murray's Law for Discrete and Continuum Models of Biological Networks*, M3AS, Vol. 29, pp 2359-2376, 2019
- R176 J. Haskovec, L.M. Kreusser, P.A. Markowich, *ODE and PDE Based Modeling of Biological Transportation Networks*, Comm. Math. Sci., Vol.17, 2019
- R175 Di Fang, S. Jin, P.A. Markowich, B. Perthame, *Implicit and Semi-Implicit Numerical Schemes for the Formation of Biological Transport Networks*, SMAI Journal of Computational Math, Vol. 5, pp 229-249, 2019
- R174 K. Bodova, J. Haskovec, P.A. Markowich, *Well Posedness and Maximum Entropy Approximation for the Dynamics of Quantitative Traits*, Physica D - Nonlinear Phenomena, Vol. 376, Special Issue SI, pp 108-120, 2018

- R173 L. Chai, S. Jin, P.A. Markowich, *A Hybrid Method for Computing the Schrödinger Equation with Periodic Potential with Band Crossing in Momentum Space*, CMP, Vol. 24, Issue 4 pp 989-1020, 2018
- R172 M.V. De Hoop, J.-G. Liu, P.A. Markowich, N.S. Ussembayev, *Plane Wave Analysis of a Hyperbolic System of Equations with Relaxation in R^d* , CMS, Vol. 17, Issue 1, pp 61-79, 2019
- R171 J. Haskovec, L.M. Kreusser, P.A. Markowich, *Rigorous continuum limit for the discrete network formation problem*, COMM. PDE, Vol. 41, pp 1159-1185, 2019
- R170 P.A. Markowich and J. Sierra, *Non-Uniqueness of Weak Solutions of the Quantum-Hydrodynamic System, Kinetic and Related Models*, Volume: 12, pp 347-356, Issue 2, 2019
- R169 J. Haskovec, S. Hittmeir, P.A. Markowich and A. Mielke, *Decay to Equilibrium for Energy-Reaction-Diffusion Systems*, SIMA, Vol. 50, Issue 1, pp 1037-1075, 2017
- R168 M. Burger, B. Düring, L.M. Kreusser, P.A. Markowich and C.-B. Schönlieb, *Pattern Formation of a Nonlocal, Anisotropic Interaction Model*, M3AS, Vol 28, Issue 3, pp 409-451, 2018
- R167 H. Chen, H. Hajaiej, S. Alhemedan and P.A. Markowich, *Existence of Solutions to Perturbed Fractional Nirenberg Problems*, Electronic Journal of Differential Equations, Article Nr.14, 2017
- R166 Y. Cho, M.M. Fall, H. Hajaiej, P.A. Markowich and S. Trabelsi, *Orbital Stability of Standing Waves of a Class of Fractional Schrödinger Equations with Hartree-type Nonlinearity*, Anal. Appl. Vol. 15, Issue 55, pp 699-29, 2017
- R165 H. Chen, H. Hajaiej, S. Alhemedan, P.A. Markowich, *Complete Study of the Existence and Uniqueness of Solutions for semilinear elliptic Equations involving Measures concentrated on the Boundary*, Complex Variables and Elliptic Equations, Vol. 62, Issue 12, pp 1687-1729, 2017
- R164 J. Haskovec, P.A. Markowich, B. Perthame and M. Schlottbom, *Notes on a PDE System for Biological Network Formation*, Nonlinear Analysis: Theory, Methods and Applications, Vol. 138, pp 127-155, 2016
- R163 P.A. Markowich, J. Teichmann and M.T. Wolfram, *Parabolic Free Boundary Price Formation Models under Market Size Fluctuations*, MMS, Vol. 14, Issue 1, pp 1211-123, 2016
- R162 G. Albi, M. Artina, M. Fornasier and P.A. Markowich, *Biological Transportation Networks: Modeling and Simulation, Analysis and Applications*, Vol. 14, Issue 1, pp 185-206, 2016

- R161 P.A.Markowich, E.Titi and S.Trabelsi, *Continuous Data Assimilation for the Three-Dimensional Brinkman-Forchheimer-Extended Darcy Model*, Nonlinearity, Vol.29, Issue 4, pp 1292-1328, 2016

- R160 J.Sierra, A.Kasimov, P.A.Markowich, R.Weishäupl, *On the Gross–Pitaevskii Equation with Pumping and Decay: Stationary States and Their Stability*, Journal of Nonlinear Science, Vol. 25, Issue 3, pp 709-739, 2015

- R159 C.Klein, P.A.Markowich and C.Sparber, *Numerical Study of Fractional Nonlinear Schrödinger equations*, Proc.R. Soc. London, Ser. A Math. Phys. Eng. Sci., 470(2172): 20140364, 26, 2014.

- R158 M.Burger, L.Caffarelli, P.A.Markowich and M.T.Wolfram, *On the Asymptotic Behaviour of a Boltzmann-type Price Formation Model*, CMS, Vol. 12, issue 7, pp 1353-1361, 2014

- R157 J. Haskovec, P.A.Markowich and B.Perthame, *Mathematical Analysis of a PDE System for Biological Network Formation*, Comm. PDE, Volume 40, Issue 5, 2014

- R156 F.H. Selem, H. Hajaiej, P.A.Markowich and S.Trabelsi, *Variational Approach to the Orbital Stability of Standing Waves of the Gross-Pitaevskii Equation*, Milan Journal of Mathematics, Vol. 82, Issue 2, pp 293-295, 2014

- R155 C.Bardos, F.Golse, P.A.Markowich and T.Paul, *On the Classical Limit of the Schrödinger Equation*, DCDS-A, Vol. 35, Nr. 12, pp 5689-5709, 2015

- R154 H.Hajaiej, P.A.Markowich and S.Trabelsi, *Minimizers of a Class of Constrained Vectorial Variational Problems: Part I*, Milan Journal of Mathematics, Vol. 82, issue 1, pp 81-98, 2014

- R153 C.Bardos, F.Golse, P.A.Markowich and T.Paul, *Hamiltonian Evolution of Monokinetic Measures with Rough Momentum Profile*, ARMA, Vol 217, pp 71-111, 2015

- R152 P.Antonelli, A.Athanassoulis, Z.Huang and P.A.Markowich, *Numerical Simulation of X-Rays Free Electron Lasers*, MMS, Vol.12, No. 4, pp 1607-1621, 2014

- R151 P.Antonelli, A.Athanassoulis, H.Hajaiej and P.A.Markowich, *On the XFEL Schrödinger Equation: Highly Oscillatory Magnetic Potentials and Time-Averaging*, ARMA, Vol. 211, issue 3, pp 711-732, 2014

- R150 J.Dolbeault, G.Jankowiak and P.A.Markowich, *Crowd Motion and Herding Models: Multiplicity and Dynamical Stability of Radial Stationary Solutions*, to appear in MEMOCS (Mathematics and Mechanics of Complex Systems), 3(3), pp 211-241, 2015

- R149 D.Brinkman, C.Heitzinger and P.A. Markowich, *Convergence of a 2D Finite Difference Scheme for the Dirac-Poisson System and the Simulation of Graphene*, JCP, Vol. 257, pp 318-332, 2014

- R148 M.Burger, M.Di Francesco, P.A.Markowich and M.-T. Wolfram, *Mean Field Games with Nonlinear Mobilities in Pedestrian Dynamics*, DCDS-B, Vol. 19, issue 5, pp 1311-1333, 2014
- R147 H.Hajaiej, P.A.Markowich, and S.Trabelsi, *Multi-configuration Hartee-Fock Theory for Pseudorelativistic Systems: The Time Dependent Case*, M3AS, Vol. 24, Issue3,pp 599-626, 2014
- R146 A.Mielke, J.Haskovec and P.A.Markowich, *On Uniform Decay of the Entropy for Reaction-Diffusion Systems*, J. Dyn. Differential Equations, Vol. 27, Issue 1-4, pp 897-928, 2016
- R145 D.Brinkman, K.Fellner, P.A.Markowich and M.T.Wolfram, *A Reaction-Diffusion Model for Excitonic-Photovoltaic Bilayers: Asymptotic Analysis and a 2-D HDG Finite Element Scheme*, M3AS, Vol. 23, issue 5, pp 839-872, 2013
- R144 A.Lorz, P.A.Markowich and B.Perthame, *Bernoulli Variational Problem and Beyond*, ARMA, Vol. 212, issue 2, pp 415-443, 2014
- R143 M.Burger, L.Caffarelli, P.A.Markowich and M.-T.Wolfram, *On a Boltzmann Price Formation Model*, Proc. Royal Soc. A, Vol. 469, no. 2157,2013
- R142 A.Figalli, C. Klein, P.A.Markowich and C.Sparber, *WKB Analysis of Bohmian Dynamics*, Comm. Pure Appl. Math., Vol 67, issue 4, pp 581-620, 2014
- R141 M.Hintermüller, P. A.Markowich, D.Marahrens and C.Sparber, *Optimal Bilinear Control of Gross-Pitaevskii Equations*, SIAM J. Control and Optimization, Vol 51, no. 3, 2013
- R140 P.A.Markowich, C.Sparber and T.Paul, *On the Dynamics of Bohmian Measures*, ARMA, Vol. 205, pp 1031-1054, 2012
- R139 A.Chertock, K. Fellner, A.Kurganov, A. Lorz and P. A. Markowich, *Sinking, Merging and Stationary Plumes in a coupled Chemotaxis-Fluid Model: A High Resolution Numerical Approach*, J. Fluid Mech, Vol. 694, pp. 154-190, 2012
- R138 M. Burger, P. A.Markowich and J.-F.Pietschmann, *Continuous Limit of a Crowd Motion and Herding Model, Kinetic and Related Models*, Vol. 4, Issue 4, pp. 1025-1047, 2011
- R137 L.Caffarelli, P.A.Markowich and M.-T.Wolfram, *On a Price-Formation Free Boundary Model by Lasry and Lions: The Neumann Case*, Comptes Rendus Mathematiques, Vol. 349, Issue 15-16, pp. 841-844, 2011
- R136 L.Caffarelli, P. A.Markowich and J.-F.Pietschmann, *On a Price Formation Free Boundary Model by Lasry and Lions*, Comptes Rendus Mathematiques, Vol. 349, Issue 11-12, pp 621-624, 2011

- R135 M. DiFrancesco, P. A. Markowich and J.-F. Pietschmann, *On the Hughes Model for Pedestrian Flow: the One-dimensional Case*, JDE, Vol. 250, Issue 3, pp. 1334-1362, 2011
- R134 S. Jin, P. A. Markowich and C. Sparber, *Mathematical and Computational Methods for Semiclassical Schrödinger Equations*, Acta Numerica, vol. 20, pp 121-209, 2011
- R133 M. DiFrancesco, A. Lorz and P. A. Markowich, *Chemotaxis-Fluid coupled Model for swimming Bacteria: Global Existence and Asymptotic Behavior*, Discrete and Continuous Dynamical Systems, Vol. 28, Issue 4, pp. 1437-1453, 2010
- R132 Z. Huang, P. A. Markowich and C. Sparber, *Numerical simulation of trapped dipolar quantum gases: Collapse studies and vortex dynamics*, KRM, Vol 3, Issue 1, 2010
- R131 K. Aoki, A. Jüngel and P. A. Markowich, *Small velocity and finite temperature variations in kinetic relaxation models*, KRM, Vol 3, Issue 1, 2010
- R130 P. A. Markowich, T. Paul and C. Sparber, *Bohmian Measures and their Classical Limit*, JFA, Vol. 209, Issue 6, pp. 1542-1576, 2010
- R129 B. Düring, P. A. Markowich, J. F. Pietschmann and M. T. Wolfram, *Boltzmann and Fokker Planck Equations modelling Opinion Formation in the Presence of strong Leaders*, Proc. Royal Soc. A: Mathematical, Physical and Engineering Sciences, Vol 465, Issue 2112, pp 3687-3708, 2009
- R128 P. A. Markowich, N. Matevosyan, J. F. Pietschmann and M. T. Wolfram, *On a parabolic free Boundary Equation modeling Prize Formation*, M3AS, Vol 19, Issue 10, pp 1929-1957, 2009
- R127 Z. Huang, S. Jin, P. A. Markowich and C. Sparber, *On the Bloch Decomposition based Spectral Method for Wave Propagation in periodic Media*, Wave Motion, Vol 46, Issue 1, pp 15-28, 2009
- R126 Z. Huang, S. Jin, P. A. Markowich and C. Sparber, *Numerical Simulation of the nonlinear Schrödinger Equation with multidimensional periodic Potentials*, Multiscale Modeling and Simulation, Vol 7, Issue 2, pp 539-564, 2008
- R125 G. L. Aki, P. A. Markowich and C. Sparber, *Classical Limit for semirelativistic Hartree Systems*, J. Math. Phys., Vol 49, Issue 10, Article Number 102110, 2008
- R124 M. DiFrancesco, K. Fellner and P. A. Markowich, *The entropy dissipation method for spatially inhomogeneous reaction-diffusion-type systems*, Proc. Royal Soc. A: Mathematical Physical and Engineering Sciences, Vol 464, Issue 2100, pp 3273-3300, 2008
- R123 R. Carles, P. A. Markowich and C. Sparber, *On the Gross-Pitaevskii equation for trapped polar quantum gases*, Nonlinearity, Vol 21, Issue 11, pp 2569-2590, 2008
- R122 M. Burger, S. Y. Chu, P. A. Markowich, and Carola Schönlieb, *The Willmore functional And Instabilities in the Cahn-Hilliard equation*, CMS, Vol 6, issue 2, pp 309-329, 2008

- R121 H.Wu, P.A.Markowich and S.M.Zheng, *Global existence and asymptotic behavior for a semi-conductor drift-diffusion-poisson model*, M3AS, Vol 18, Issue 3, pp 443-487, 2008
- R120 B.Perthame, P.A.Markowich and J.Zubelli, *Mathematical methods and modeling of bio-physical phenomena*, Mathematical and Computer Modelling, Vol 47, Issue 7-8, pp 663-665 2008.
- R119 R.M.Weishäupl, C.Schmeiser and P.A.Markowich, *A Hermite Pseudo-spectral method physical for solving systems of Gross-Pitaevskii equations*, CMS, Vol 5, Issue: 2, p 299-312, 2007
- R118 W.Bao, Y.Ge, D.Jaksch, P.A.Markowich and R.Weishäupl, *Convergence Rate of Dimension Reduction in Bose-Einstein Condensates*, Computer Physics Communications, Vol 177, Issue 11, pp 832-850, 2007
- R117 K. Aoki, P.A.Markowich and S.Takata, *Kinetic Relaxation Models for Energy Transport*, J. Stat. Phys, Vol. 127, No. 2, pp 287-312, 2007
- R116 J. Dolbeault, P.A.Markowich, D.Ölz and C.Schmeiser, *Nonlinear Diffusions as Limit of Kinetic Equations with Relaxation Collision Kernels*, Archive Rational Mechanics and Anal., Vol 186, Issue 1, pp 133-158, 2007
- R115 C.Klein, C.Sparber and P.A.Markowich, *Numerical Study of Oscillatory Regimes in the Kadomtsev-Petviashvili Equation*, J. Nonlinear Science, Vol 17, Issue 5, pp 429-470, 2007
- R114 Z.Huang, S.Jin, P.A.Markowich and C.Sparber, *A Bloch Decomposition based Numerical method for Quantum Dynamics in Periodic Potentials*, SIAM J. Sci. Comp., Vol. 29, pp 515-538, 2007
- R113 A.Leitao, P.A.Markowich and J.P.Zubelli, *On Inverse Doping Profile Problems for the stationary Voltage-Current Map*, Inverse Problems, Vol. 22, No. 3, pp 1071-1088, 2006
- R112 F.Chalub, Y.Dolak-Strauss, P.A.Markowich, D.Ölz, C.Schmeiser and A.Soreff, *Model Hierarchies for Cell Aggregation by Chemotaxis*, M3AS, Vol. 16, Supp. Issue 1 2006
- R111 W.Bao, P.A.Markowich, Ch.Schmeiser, R.M.Weishäupl, *On the Gross-Pitaevskii Equation with Strongly Anisotropic Confinement: Formal Asymptotics and Numerical Experiments*, M3AS, Vol. 15 (5), pp 767-782, 2005

- R110 S.Wang, Z.Xin & P.A.Markowich, *Quasineutral Limit of the Drift Diffusion Models for Semiconductors: The Case of General Sign-changing Doping Profile*, SIAM. J. Math. Anal., Volume 37, Issue 6, pp 1854-1889, 2005
- R109 Z.Huang, S.Jin, P. A.Markowich, C.Sparber and C.Zheng, *A Time-Splitting Scheme for the Dirac-Maxwell System*, JCP, Vol. 208, Issue 2, pp 761-789, 2005
- R108 W.Bao, H.Wang & P.A.Markowich, *Ground, symmetric and central vortex states in rotating Bose-Einstein condensates*, CMS, Vol. 3, Issue 1, pp 57-88, 2005
- R107 P.A.Markowich and L.Pareschi, *Fast conservative and entropic numerical methods for the Boson Boltzmann equation*, Num. Math., Vol. 99(3), pp 509-532, 2005
- R106 R.Carles, C.Sparber & P.A.Markowich, *Semiclassical Asymptotics for Weakly Nonlinear Bloch Waves*, Journal of Stat., Physics, Vol. 117, No.1/2, pp 369-401, 2004
- R105 A.Arnold, J. A.Carrillo, L.Desvillettes, J.Dolbeault, A.Jüngel, C.Lederman, P.A.Markowich, G.Toscani & C.Villani, *Entropies and Equilibria of Many Particle Systems: An Essay on Recent Research*, Monatshefte für Mathematik, Vol. 142, No 1-2, pp 35-43, 2004
- R104 N.Matevosyan & P.A.Markowich, *Behavior of the free boundary near contact points with the fixed boundary for nonlinear elliptic equations*, Monatshefte für Mathematik, vol. 142, No 1-2, pp 17-25, 2004
- R103 W.Bao, D.Jaksch and P.A.Markowich, *Three Dimensional Simulation of Jet Formation in Collapsing Condensates*, J. Physics B: At.Mol.Opt.Phys., Vol. 37, No.2, pp. 329-343, 2004
- R102 M.Burger, H.W.Engl, A.Leitao and P.A.Markowich, *On Inverse Problems for Semiconductor Equations*, Milan Journal of Math., Vol. 72 (1), pp 273-313, 2004
- R101 W.Bao & L.Pareschi & P.A.Markowich, *Quantum kinetic theory: Modelling and Numerics for Bose-Einstein Condensation*, Chapter 10 in: Modeling and Computational Methods for Kinetic Equations, Series: Modeling and Simulation in Science, Engineering And Technology, Birkhäuser, pp 287-320, 2004
- R100 C.Sparber, J.A.Carillo, J.Dolbeault and P.A.Markowich, *On the Long Time Behavior of the Quantum Fokker-Planck equation*, Monatshefte für Mathematik, Vol. 141, No. 3, pp 237-257, 2004
- R99 S.Jin, C.Zheng and P.A.Markowich, *Numerical Simulation of a Generalized Zakharov System*, JPC, Volume 197, No. 2, pp 376-395, 2004
- R98 L.Gosse and P.A.Markowich, *Multiphase Semiclassical Approximation of an Electron in a One-Dimensional Crystalline Lattice*, JCP, Vol. 197, No. 2, pp 387-417, 2004

- R97 F.A.C.C.Chalub, P.A.Markowich, B.Perthame and C.Schmeiser, *Kinetic Models for Chemotaxis and their Drift-Diffusion Limits*, Monatshefte für Mathematik, Vol. 142, No.1/2, pp 123-141, 2004
- R96 V.Imaikin, A.Komech and P.A.Markowich, *Scattering of Solitons of the Klein-Gordon Equation Coupled to a Classical Particle*, J. Math. Physics, Vol . 44, No. 3, pp 1202-1217, 2004
- R95 M.DiFrancesco and P.A.Markowich, *Entropy dissipation and Wasserstein metric methods for the viscous Burger's equationn: Convergence to diffusive waves*, Contemporary Mathematics, Eds.C.Conca, R.Manasevich, G.Uhlmann, M.Vogelius, AMS, ISBN 0-8218-3448-7, 2004
- R94 C.Sparber and P.A.Markowich, *Semiclassical Asymptotics for the Maxwell-Dirac System*, Journal Math. Phys., Vol. 44, pp. 4555-4572, 2003
- R93 W.Bao, D.Jaksch and P.A.Markowich, *Numerical solution of the Gross-Pitaevskii Equation for Bose-Einstein condensation*, JCP, Vol. 187, No. 1, pp. 318-342, 2003
- R92 C.Sparber, P.A.Markowich and N.Mauser, *Wigner Functions versus WKB-Methods in Multivalued Geometrical Optics*, Asymptotic Analysis, 33 (2), pp. 153-187, 2003
- R91 L.Hsiao, P.A.Markowich and S.Wang, *The Asymptotic Behavior of Globally Smooth Solutions of the Multidimensional Isentropic Hydrodynamic Model for Semiconductors*, Journal of Differential Equations, Vol. 192, Issue 1, pp. 111-133, 2003
- R90 W.Bao, P.A.Markowich and S.Jin, *Numerical Study of time-splitting spectral Discretisations of nonlinear Schroedinger Equations in the Semiclassical Regimes*, SIAM J. Sci.Comput., Vol. 25, No. 1, pp 27-64, 2003
- R89 J.A.Carillo, C.Lederman, P.A.Markowich and G.Toscani, *Poincare Inequalities for Linearization of Very Fast Diffusion Equations*, Nonlinearity, Vol. 15, No. 3, pp. 565-580, 2002
- R88 P.A.Markowich, G.Rein and G.Wolansky, *Existence and nonlinear stability of steady states of the Schrödinger-Poisson system*, Journal of Statistical Physics, 106(5), pp. 1221-1239, 2002
- R87 I.Gasser, L.Hsiao, P.A.Markowich and S.Wang, *Quasineutral limit of a nonlinear drift diffusion model for semiconductors*, J. Math. Anal. Appl., Vol. 268, pp. 184-199, 2002
- R86 H.Li, P.A.Markowich and M.Mei, *Asymptotic behavior of subsonic shock solutions of the isentropic Euler-Poisson equations*, Quart. Appl. Math. 60, No. 4, pp. 773-796, 2002

- R85 W.Bao, S.Jin and P.A.Markowich, *Time-splitting spectral approximations for the Schrödinger equation in the semiclassical regime*, JCP, Vol. 175, pp. 487-524, 2002
- R84 P.A.Markowich, P.Pietra, C.Pohl and H.P.Stimming, *A Wigner-Measure Analysis of the Dufort-Fraenkel Scheme for the Schrödinger Equation*, SINUM, Vol. 40, No. 4, pp. 1281-1310, 2002
- R83 H.Li, P.A.Markowich and M.Mei, *Asymptotic Behaviour of Solutions of the Hydrodynamic Model of Semiconductors*, Proc. Royal Soc. Edinburgh, 132A, pp. 359-378, 2002
- R82 I.Gasser, P.A.Markowich, D.Levermore, C.Schmeiser, *The Initial Time Layer Problem and the Quasineutral Limit in the Semiconductor Drift-Diffusion Model*, Euro.J. of Appl. Math., Vol. 12, pp. 497-512, 2001
- R81 J.A.Carrillo, A.Jüngel, P.A.Markowich, G.Toscani and A.Unterreiter, *Entropy dissipation methods for degenerate parabolic problems and generalized Sobolev inequalities*, Monatshefte für Mathematik, Vol. 133, pp. 1-82, 2001
- R80 J.Dolbeault, P.A.Markowich and A.Unterreiter, *On Singular Limits of Mean-Field Equations*, Arch. Rat. Mech. Anal., Vol. 158, No. 4, pp. 319-351, 2001
- R79 M.Burger, H.W.Engl, P.A.Markowich and P.Pietra, *Identification of Doping Profiles in Semiconductor Devices*, Inverse Problems, Vol. 17, No. 6, pp. 1765-1795, 2001
- R78 A.Arnold, J.L.López, P.A.Markowich and J.Soler, *An Analysis of Quantum Fokker-Planck Models: A Wigner Function Approach*, Rev. Mat. Iberoamericana, Vol 20, Issue 3, pp 771-814, 2004
- R77 C.Lederman, and P.A.Markowich, *On Fast-Diffusion Equations with Infinite Equilibrium Entropy and Finite Equilibrium Mass*, Communications in Partial Differential Equations Vol. 28, Issue 1 & 2, pp. 301-332, 2001
- R76 N.Ben Abdallah, P.Degond, P.A.Markowich and C.Schmeiser, *High Field Approximations of the Spherical Harmonics Expansion Model for Semiconductors*, ZAMP, Vol. 52, 2001
- R75 A.Arnold, P.A.Markowich, G.Toscani and A.Unterreiter, *On Convex Sobolev Inequalities and the Rate of Convergence to Equilibrium for Fokker-Planck Type Equations*, Comm. PDE, Vol. 26/1-2, 43-100, 2001
- R74 I.Gasser, C.K.Lin, and P.A.Markowich, *A Review of Dispersive Limits of (non)linear Schrödinger-Type Equations*, Taiwanese Journal. of the Math., Vol. 4, No. 4, pp. 501-529, 2000

- R73 A.Arnold, P.A.Markowich, G.Toscani and A.Unterreiter, *On Generalized Csiszar Kullback Inequalities*, Monatshefte für Mathematik, Vol. 131, No. 3, pp. 235-253, 2000
- R72 F.Castella, L.Erdös, F.Frommlet and P.A.Markowich, *Fokker-Planck Equations as Scaling Limits of Reversible Quantum Systems*, J. Stat. Physics, Vol. 100, Issue 3/4, pp. 543-601, 2000
- R71 P.Biler, J.Dolbeault and P.A.Markowich, *Large Time Asymptotics of Nonlinear Drift Diffusion Systems with Poisson Coupling*, TTSP, Vol. 30, No. 4-6, pp. 521-536
- R70 L.Caffarelli, J.Dolbeault, P.A.Markowich and C.Schmeiser, *On Maxwellian Equilibria of Insulated Semiconductors*, Interfaces and Free Boundaries, Vol. 2, pp. 331-339, 2000
- R69 A.Arnold, P.A.Markowich and G.Toscani, *On Large Time Asymptotics for Drift Diffusion-Poisson Systems*, Transport Theory Statist. Phys., Vol 29, no. 3-5, pp 571-581, 2000
- R68 E.Gabetta, P.A.Markowich and A.Unterreiter, *A Note on the Entropy Production of the Radiative Transfer Equation*, Applied Mathematics Letters, Vol. 12, pp. 111-116, 1999
- R67 P.A.Markowich and F.Poupaud, *The Pseudo-Differential Approach to Finite Differences Revisited*, Calcolo, Vol. 36, pp. 161-186, 1999
- R66 I.Gasser, P.A.Markowich and B.Perthame, *Dispersion and Moment Lemmas Revisited*, J. Diff. Equations, Vol. 156, pp. 254-281, 1999
- R65 P.A.Markowich, P.Pietra and C.Pohl, *Numerical Approximation of Quadratic Observables of Schrödinger-Type Equations in the Semiclassical Limit*, Num. Math, Vol. 81, pp. 595-630, 1999
- R64 I.Gasser, R.Illner, P.A.Markowich and C.Schmeiser, *Semiclassical, t to infinity Asymptotics and Dispersive Effects for Hartree-Fock Systems*, M2AN, Vol. 32, pp. 699-713, 1998
- R63 N. Ben Abdallah, P.Degond and P.A. Markowich, *The Quantum Child-Langmuir Problem*, Nonlinear Analysis: Theory, Methods and Applications, Vol. 31, No. 516, pp. 629-648, 1998
- R62 P.Gerard, P.A.Markowich, N.J.Mauser and F.Poupaud, *Homogenization Limits and Wigner Transforms*, Comm. Pure and Appl. Math., Vol. 50, pp. 323-378, 1997
- R61 N.Ben Abdallah, P.Degond and P.A.Markowich, *On a One-dimensional Schrödinger Poisson Scattering Model*, ZAMP, Vol. 48, pp. 135-155, 1997

- R60 P.A.Markowich and C.Schmeiser, *The Drift-Diffusion Limit for Electron-Phonon Interaction in Semiconductors*, M3AS, Vol. 7, No. 5, pp. 707-729, 1997
- R59 I.Gasser and P.A.Markowich, *Quantum Hydrodynamics, Wigner Transforms and the Classical Limit*, Asympt. Analysis, Vol. 14, No. 2, pp. 97-116, 1997
- R58 A.Arnold, L.L.Bonilla and P.A.Markowich, *Liapunov Functionals and Large-Time-Asymptotics of Mean-Field Nonlinear Fokker-Planck Equations*, Transport Theory and Stat. Physics, Vol. 25, No. 7, pp. 733-752, 1996
- R57 S.Cordier, P.Degond, P.A.Markowich and C.Schmeiser, *Travelling Wave Analysis of an Isothermal Euler-Poisson Model*, Annales de la Faculté des Sciences de Toulouse, Vol. V, No. 4, pp. 599-643, 1996
- R56 P.A.Markowich and F.Poupaud, *The Maxwell Equations in a Periodic Medium: Homogenization of the Energy Density*, Annali della Scuola Normale e Superiore di Pisa, Serie IV, Vol. XXIII, pp. 301-324, 1996
- R55 P.A.Markowich, F.Poupaud and C.Schmeiser, *Diffusion Approximation of Nonlinear Electron-Phonon Collision Mechanisms*, M2AN, Vol. 29, No. 7, pp. 857-869, 1995
- R54 P.A.Markowich and C.Schmeiser, *Relaxation Approximation for Electron-Phonon Interaction in Semiconductors*, M3AS, Vol. 5, No. 4, pp. 519-527, 1995
- R53 F.Brezzi, I.Gasser, P.A.Markowich and C.Schmeiser, *Thermal Equilibrium States of the Quantum Hydrodynamic Model for Semiconductors in One Dimension*, Appl. Math. Letters, Vol. 8, No. 1, pp. 47-52, 1995
- R52 S.Cordier, P.Degond, P.A.Markowich and C.Schmeiser, *Travelling Wave Analysis and Jump Relations for the Euler-Poisson Model in the Quasineutral Limit*, Asympt. Analysis, Vol. 11, pp. 209-240, 1995
- R51 P.A.Markowich and C. Ringhofer, *Quantum Hydrodynamics for Semiconductors in the High-Field Case*, Appl. Math. Letters, Vol. 7, No.5, pp 37-41, 1994
- R50 S.Cordier, P.Degond, P.A.Markowich and C.Schmeiser, *Travelling Wave Analysis of an Isothermal Euler-Poisson Model for Plasmas*, C. R. Acad. Sci. Paris, t. 318, Série I, 801-806, 1994
- R49 P.A.Markowich, N.J.Mauser and F.Poupaud, *A Wigner Function Approach to (Semi)classical Limits: Electrons in a Periodic Potential*, J. Math. Phys., Vol. 35 (3), 1066-1094, 1994
- R48 P.A.Markowich, *Boltzmann Distributed Quantum Steady States and Their Classical Limit*, Forum Mathematicum, Vol. 6, pp. 1-33, 1994

- R47 P.A.Markowich and A.Unterreiter, *Vacuum Solutions of a Stationary Drift-Diffusion Model*, Annali de la Scuola Normale e Superiore di Pisa, Serie IV, Vol. XX, pp. 371-386, 1993
- R46 P.A.Markowich and P.Pietra, *A Non-Isentropic Euler-Poisson Model for a Collisionless Plasma*, Math. Methods in the Appl., Sci. Vol. 16, pp. 409-442, 1993
- R45 P.A.Markowich and N.J.Mauser, *The Classical Limit of a Self-Consistent Quantum Vlasov Equation*, M3AS, Vol. 3, No. 1, pp. 109-124, 1993
- R44 P.Degond and P.A.Markowich, *A Steady State Potential Flow Model for Semiconductors*, Annali di Matematica Pura ed Applicata, Vol. CLXV, pp. 87-98, 1993
- R43 F.Brezzi and P.A.Markowich, *The Three-Dimensional Wigner-Poisson System: Existence, Uniqueness, and Approximation*, Math. Methods in the Appl. Sci., Vol. 14, pp. 35-62, 1991
- R42 U.M.Ascher, P.A.Markowich, P.Pietra and C.Schmeiser, *A Phase Plane Analysis of Transonic Solutions for the Hydrodynamic Semiconductor Model*, M3AS, Vol. 14, pp. 347-376, 1991
- R41 N.J.Mauser, A.Arnold and P.A.Markowich, *The self-Consistent Bloch-Equation in One Dimension*, Comp. Math. Applic., Vol. 21, pp. 197-202, 1991
- R40 A.Arnold, P.A.Markowich and N.J.Mauser, *The One-Dimensional Periodic Bloch-Poisson Equations*, M3AS, Vol. 1, pp. 83-112, 1991
- R39 P.A.Markowich, *On Steady State Euler-Poisson Models for Semiconductors*, ZAMP, Vol. 42, pp. 389-407, 1991
- R38 P.Degond and P.A.Markowich, *A Mathematical Analysis of Quantum Transport in Three Dimensional Crystals*, Annali di Matematica Pura ed Applicata, Vol. CLX, 171-191, 1991
- R37 P.Degond and P.A.Markowich, *On a One-Dimensional Steady State Hydrodynamic Model for Semiconductors*, Appl. Math. Letters, Vol. 3, pp. 25-29, 1990
- R36 P. Degond and P.A.Markowich, *A Quantum Transport Model for Semiconductors: The Wigner-Poisson Problem on a Bounded Brillouin Zone*, M2AN, Vol. 24, pp. 697-710, 1990
- R35 A.Arnold and P.A.Markowich, *The Periodic Quantum Liouville-Poisson-Problem*, Bollettino U.M.I., Vol. 7, 4-B, pp. 449-484, 1990
- R34 U.M.Ascher, P. A. Markowich, C.Schmeiser, H.Steinrück and R.Weiss, *Conditioning of the Steady State Semiconductor Device Problem*, SIAM J. Appl. Math., Vol. 49, 165-185, 1989

- R33 P.A.Markowich and C.Ringhofer, *An Analysis of the Quantum Liouville Equation*, ZAMM, Vol. 69, pp. 121-127, 1989
- R32 P.A.Markowich and P.Szmolyan, *A System of Convection-Diffusion Equations with Small Diffusion Coefficients Arising in Semiconductor Physics*, J. Diff. Equations, Vol. 81, pp. 234-254, 1989
- R31 P.A.Markowich, *On the Equivalence of the Schrödinger Equation and the Quantum Liouville Equation*, Math. Meth. in the Applied Sci., Vol. 11, pp. 459-469, 1989
- R30 A.Arnold, P.Degond, P.A.Markowich and H.Steinrück, *The Wigner-Poisson Problem in a Crystal*, Appl. Math. Letters, Vol. 2, pp. 187-191, 1988
- R29 P.A.Markowich and F.Brezzi, *A Convection-Diffusion Problem with Small Diffusion Coefficient Arising in Semiconductor Physics*, Bolletino U. M. I., Vol. 7, 2-B, pp. 904-930, 1988
- R28 P.A.Markowich and M.Zlamal, *Inverse Average Finite Element Discretisations of Self-Adjoint Second Order Elliptic Problems*, Math. Comp., Vol. 51, pp. 431-449, 1988
- R27 P.A.Markowich and C.Ringhofer, *Stability of the Linearized Transient Semiconductor Device Equations*, ZAMM, Vol. 67, No. 7, pp. 319-322, 1987
- R26 S.J.Polak, C.Den Heijer, W.H. A.Schilders and P.A.Markowich, *Semiconductor Device Modelling from the Numerical Point of View*, IJNME, Vol. 24, pp. 763-838, 1987
- R25 P.A.Markowich, C.Ringhofer and C.Schmeiser, *An Asymptotic Analysis of One-Dimensional Semiconductor Device Models*, IMA J. Appl. Math., Vol. 37, pp. 1-24, 1986
- R24 P.A.Markowich and C.Schmeiser, *Uniform Asymtotic Representation of Solutions of the Basic Semiconductor Device Equations*, IMA J. Appl. Math., Vol. 36, pp. 43-57, 1986
- R23 P.A.Markowich, *A Finite Difference Method for the Basic Stationary Semiconductor Device Equations*, Numerical Boundary Value ODE's, Birkhäuser, Boston-Basel-Stuttgart, pp. 285-302, 1985
- R22 P.A.Markowich, *A Nonlinear Eigenvalue Problem Modelling the Avalanche Effects in Semiconductor Device Diodes*, SIAM J. Math. Anal., Vol. 16, No. 6, pp. 1268-1283, 1985
- R21 P.A.Markowich and M.Renardy, *A Finite Difference Study of the Stretching and Break-Up of Filaments of Polymer Solutions*, Journal of Non-Newtonian Fluid Mechanics, Vol. 17, pp. 12-22, 1984

- R20 P.A.Markowich, C.Ringhofer and A.Steindl, *Computation of Current-Voltage Characteristics in a Semiconductor Device Using Arc-Lenght Continuation*, IMA J. Appl. Math., Vol. 33, pp. 175-187, 1984
- R19 P.A.Markowich, *A Singular Perturbation Analysis of the Fundamental Semiconductor Equations*, SIAM J. Appl. Math., Vol. 44, No. 5, pp. 896-928, 1984
- R18 P.A.Markowich and S.Selberherr, *A Singular Perturbation Analysis of the Fundamental Semiconductor Device Equations – Analysis and Numerical Experiments*, Matematica Aplicada e Computacional, Vol. 3, No. 22, pp. 131-156, 1984
- R17 P.A.Markowich and C.Ringhofer, *A Singularly Perturbed Boundary Value Problem Modelling a Semiconductor Device*, SIAM J. Appl. Math., Vol. 44, No. 2, pp. 231-256, 1984
- R16 P.A.Markowich and M.Renardy, *Lax-Wendroff Methods for Hyperbolic History Value Problems*, SIAM J. Num. Anal., Vol. 21, No. 1, pp. 24-51, 1984
- R15 P.A.Markowich, *A Qualitative Analysis of the Fundamental Semiconductor Device Equations*, COMPEL, Vol. 2, No. 3, pp. 97-115, 1983
- R14 P.A.Markowich and M. Renardy, *The numerical Solution of a Class of Quasilinear Volterra Equations arising in Polymer Rheology*, SIAM J. Num. Anal., Vol.20, No. 5, pp. 890-908, 1983
- R13 P.A.Markowich, C.Ringhofer, S.Selberherr and M.Lentini, *A Singular Perturbation Approach for the Analysis of the Fundamental Semiconductor Equations*, IEEE Transactions on Electronic Devices, Vol. ED-30, No. 9, pp. 1165-1180, 1983
- R12 P.A.Markowich and C.Ringhofer, *Systems of Singular Perturbation Problems with a Singularity of the Second Kind*, SIAM J. Math. Anal., Vol. 14, No. 5, pp. 897-914, 1983
- R11 P.A. Markowich and C.Ringhofer, *Systems of Singular Perturbation Problems with a First Order Turning Point*, SIAM J. Math. Anal., Vol. 14, No. 5, pp. 875-896, 1983
- R10 P.A.Markowich and R.Weiss, *Nonlinear Eigenvalues Problems on Infinite Intervals*, SIAM J. Math. Anal., Vol. 14, No. 3, pp. 432-449, 1983
- R9 P.A.Markowich and C.Ringhofer, *Collocation Methods for Boundary Value Problems on Long Intervals*, Math. Comp., Vol. 40, No. 161, pp. 231-250, 1983
- R8 E.Langer, S.Selberherr, P.A.Markowich and C.Ringhofer, *Numerical Analysis of Acoustic Wave Generation in Anisotropic Piezoelectric Materials*, Sensors and Actuators, Vol. 4, pp. 71-76, 1983

- R7 P.A.Markowich and M.Renardy, *A Nonlinear Volterra Integrodifferential Equation Describing the Stretching of Polymeric Liquids*, SIAM J. Math. Anal., Vol. 14, No. 1, pp. 66-96, 1983
- R6 P.A.Markowich, *Analysis of Boundary Value Problems on Infinite Intervals*, SIAM J. Math. Anal., Vol. 14, No. 1, pp. 11-37, 1983
- R5 P.A.Markowich, *Difference Methods for Parabolic History Value Problems*, Numer. Funct. Anal. And Optimiz., Vol. 5, No. 3, pp. 289-317, 1982-1983
- R4 P.A.Markowich, *Eigenvalue Problems on Infinite Intervals*, Math. Comp., Vol. 39, No. 160, pp. 421-441, 1982
- R3 P.A.Markowich, *Asymptotic Analysis of Karman Flow*, SIAM J. Appl. Math., Vol. 42, No. 3, pp. 549-557, 1982
- R2 P.A.Markowich, *A Theory for the Approximation of Solutions of Boundary Value Problems on Infinite Intervals*, SIAM J. Math. Anal., Vol. 13, pp. 484-513, 1981
- R1 P.A.Markowich, *A Mathematical Model for the Diffusion of Innovation*, IEEE, Vol. SMC-11, No. 7, pp. 504-509, 1981

PUBLICATIONS IN CONFERENCE PROCEEDINGS

- C32 Y. Giga, P. Kloeden, I. Lasiecka, P. Markowich, E. Rocca, E. Valdinoci, E. Zuazua, K. Cieplinski, *Special issue on PDEs and their applications at DEA 2019 PREFACE*, DCDS-Series B, Vol. 25, Issue 10, 2020
- C31 P.A. Markowich, *Numerical Analysis of Schrödinger Equations in the Highly Oscillatory Regime*, Proc. ICM (Hyderabad), 2010
- C30 P.A.Markowich, *Applied Partial Differential Equations: Visualization by Photography*, Mathknow: Mathematics, Applied Sciences And Real Life, Book Series: MS&A-Modeling Simulation and Applications, Vol 3, pp 27-36, 2009
- C29 P.A.Markowich and C.Sparber, *Highly Oscillatory Partial Differential Equations*, Proc. ICIAM 2003, SIAM, 2003

- C28 A.Jüngel, H.Li, P.A.Markowich and W.Shu, *Recent Progress on Quantum Hydrodynamic Models for Semiconductors*, Proc. Ninth International Conference on Hyperbolic Problems Theory, Numerics, Application (Pasadena 2002), 2003
- C27 M.Burger and P.A.Markowich, *Model reduction for semiconductor inverse dopant profiling*, Proceedings of the 4-th IMACS, Symposium on Mathematical Modelling, Vienna, 2003
- C26 M.Burger, H.Engl and P.A.Markowich, *Inverse Doping Problems for Semiconductor Devices*, Proc. International Symposium on Computational and Applied PDEs (Zhangjiajie, China, July 2001), 2002
- C25 H.Li and P.A.Markowich, *A Review of Hydrodynamical Models for Semiconductors, Asymptotic Behavior*, Boletim da Sociedade Brasileira de Matematica, Vol. 32, No. 3, pp.321-342, 2001
- C24 P.Biler, J.Dolbeault, M.J.Esteban, P.A.Markowich, T.Nadzieja, *Steady States for Streater's energy-transport Models of Self-Gravitating Particles, Transport in Transition Regimes*, IMA Volumes in Mathematics Series, Vol. 135, Springer Verlag, 2001
- C23 P.A.Markowich and C.Villani, *On the trend to equilibrium for the Fokker-Planck equation: an interplay between physics and functional analysis*, Matematica Contemporanea (SBM), vol. 19, pp.1-31, 2000
- C22 A.Jüngel, P.A.Markowich, and G.Toscani, *Decay rates for solutions of degenerate parabolic systems*, Proceedings: USA-Chile Conference on Nonlinear Analysis, EJDE Conference 06, pp 189-202, 2001
- C21 A.Carrillo, P.A.Markowich and A.Unterreiter *Large-time asymptotics of porous-medium type equations, GAKUTO International series*, Mathematical Sciences and Applications, Vol. 13, pp. 24-36, 2000
- C20 I.Gasser, P.A.Markowich and B Perthame, *Dispersion Lemmas Revisited*, Special Issue of IEEE-VLSI Design, 1998
- C19 P.A.Markowich, P.Pietra and C.Pohl, *Semiclassical Analysis of Discretisations of Schrödinger-Type Equations*, Special Issue of IEEE-VLSI Design, 1998
- C18 F.Frommlet, P.A.Markowich and C.A.Ringhofer, *A Wigner Function Approach to Phonon Scattering*, IEEE-VLSI Design, Vol. 9, No. 4, pp. 339-350, 1999
- C17 P.A.Markowich, P.Pietra and C.Pohl, *A Wigner Measure Approach to the Analysis of Difference Methods for the Schrödinger Equation*, Proc. ENUMATH Conference, 1997

- C16 I.Gasser, P.A.Markowich and C.A.Ringhofer, *Closure Conditions for Classical and Quantum Moment Hierarchies in the Small-Temperature Limit*, Transport Theory and Stat. Physics, Vol. 25, Nr. 3-5 (Special issue devoted to the 2nd Int. Workshop on Nonlinear Kinetic Theories and Math. Aspects of Hyperbolic Systems, San Remo, Italy, 1994), pp. 409-424, 1996
- C15 I.Gasser, P.A.Markowich and C.Pohl, *A Dispersive Numerical Method for Quantumhydrodynamics*, Proc. of the 4th Int. Seminar on Simulation of Devices and Technologies (ISSDT 95), Berg-en-Dal, South Africa, 1995
- C14 I.Gasser, P.A.Markowich, D.Schmidt and A.Unterreiter, *Macroscopic Theory of Charged Quantum Fluids*, Proc. of the Conference „Mathematical Analysis of Semiconductor Structures“ (Rom 1994), Pitman Res. Notes on Math., Nr. 340, 1995
- C13 I.Gasser, P.A.Markowich, *Quantum Hydrodynamics: Derivation and Classical Limit*, in Quantum Transport in Ultra-small Devices, NATO ASI series, Series B, Physics Vol. 342, 493-496, 1995
- C12 U.Ascher, P.A.Markowich, P.Pietra and C.Schmeiser, *A Phase-Plane Analysis of Hydrodynamic Models for Collisionless Plasmas*, Proc. of the 9th France-USSR-Italy-Symposium in Comp. Math. and Application, 1991
- C11 A.Arnold and P.A.Markowich, *Quantum Transport Models for Semiconductors*, Applied and Industrial Mathematics, Kluwer Academic Publishers, 1991
- C10 P.A.Markowich, *Spatial-Temporal Structure of Solutions of the Semiconductor Device Problem*, Lectures in Applied Mathematics, AMS, Vol. 25, 1990
- C9 F.Brezzi, L.D.Marini, P.A.Markowich and P.Pietra, *On Some Numerical Problems in Semiconductor Device Simulation*, III Workshop on Mathematical Aspects of Fluid and Plasma Dynamics, Salice Terme (1988), Springer Lecture Notes in Mathematics, Nr. 1460, pp. 31-42, 1991
- C8 U.M.Ascher, P.A.Markowich, C.Schmeiser, H.Steinrück and R.Weiss, *On the Conditioning of the Steady State Semiconductor Device Problem*, Proc. of the NUMOS I Conference: Fundamental Research on the Numerical Modelling of Semiconductor Devices and Processes, Boole Press, 1987
- C7 P.A.Markowich and S. Selberherr, *Steady State Semiconductor Device Modeling – A State of the Art Report*, Proc. of Advances in Circuits and Systems, Science Press Beijing, China, pp. 444-447, 1985
- C6 G.A.Franz, A.F.Franz, S.Selberherr and P.A.Markowich, *A Quasi Three-dimensional Semiconductor Device Simulation Using Cylindrical Coordinates*, Proc. of the Third International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits, Boole Press, pp. 122-128, 1983

- C5 G.A.Franz, A.F.Franz, S.Selberherr and P.A.Markowich, *The Influence of Various Mobility Models on the Interaction Process and Solution of the Basic Semiconductor Equations*, Proc. of the Third International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits, Boole Press, pp. 117-122, 1983
- C4 W.Agler, P.A.Markowich and S.Selberherr, *A Singular Perturbation Analysis of Discretisation Methods for the Parabolic Semiconductor Device Equations*, Proc. of the Third International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits, Boole Press, pp. 85-91, 1983
- C3 E.Langer, S.Selberherr and P.A.Markowich, *Surface and Bulk Wave Velocities in Arbitrary Anisotropic Piezoelectric Materials*, Proc. of the Ultrasonics Symposium, IEEE, pp. 1157-1160, 1983
- C2 E.Langer, S.Selberherr, P.A.Markowich and C.Ringhofer, *Numerical Analysis of Acoustic Wave Generation in Anisotropic Piezoelectric Materials*, Proc. of the Ultrasonics Symposium, IEEE, pp. 350-353, 1982
- C1 P.A.Markowich and M.Renardy, *Solution of a Hyperbolic Volterra Equation by a Finite Difference Scheme*, Transactions of the 28th Conference of US Army Mathematicians, pp. 451-430, 1982

Abbreviations of (some) Journal Names:

ARMA: Archives for Rational Mechanics and Analysis (Springer)

DCDS-A: Discrete and Continuous Dynamical Systems - Series A (American Institute of Mathematical Sciences)

MMS: Multiscale Modeling and Simulation (SIAM)

CMS: Communications in Mathematical Sciences (International Press)

MEMOCS: Mathematics and Mechanics of Complex Systems (International Research Center for the Mathematics and Mechanics of Complex Systems)