

## Publications

### Textbook

1. G. Hager and G. Wellein: *Introduction to High Performance Computing for Scientists and Engineers*. CRC Press, ISBN 978-1439811924, 356 pages, July 2010

### Journals

2. M. Röhrig-Zöllner, J. Thies, M. Kreutzer, A. Alvermann, A. Pieper, A. Basermann, G. Hager, G. Wellein, and H. Fehske. Accepted for publication in the SIAM Journal on Scientific Computing. Preprint: <http://elib.dlr.de/89980/>  
*Increasing the performance of the Jacobi-Davidson method by blocking*
3. T. Malas, G. Hager, H. Ltaief, H. Stengel, G. Wellein, and D. Keyes. SIAM Journal on Scientific Computing 37(4), C439-C464 (2015). DOI: 10.1137/140991133  
*Multicore-optimized wavefront diamond blocking for optimizing stencil updates*
4. M. Wittmann, G. Hager, T. Zeiser, J. Treibig, and G. Wellein. Concurrency and Computation: Practice and Experience (2015). DOI: 10.1002/cpe.3489  
*Chip-level and multi-node analysis of energy-optimized lattice-Boltzmann CFD simulations*
5. M. Kreutzer, G. Hager, G. Wellein, H. Fehske, and A. R. Bishop. SIAM Journal on Scientific Computing 36(5), C401–C423 (2014). DOI: 10.1137/130930352.  
*A unified sparse matrix data format for efficient general sparse matrix-vector multiplication on modern processors with wide SIMD units*
6. G. Hager, J. Treibig, J. Habich, and G. Wellein. Concurrency and Computation: Practice and Experience, DOI: 10.1002/cpe.3180 (2014)  
*Exploring performance and power properties of modern multicore chips via simple machine models*
7. A. Pieper, R. L. Heinisch, G. Wellein and H. Fehske. Phys. Rev. B 89, 165121 (2014)  
*Dot-bound and dispersive states in graphene quantum dot superlattices*
8. M. Wittmann, T. Zeiser, G. Hager, and G. Wellein. Computers & Fluids 80 (2013), 283-289. DOI: 10.1016/j.compfluid.2012.02.007.  
*Domain decomposition and locality optimization for large-scale lattice Boltzmann simulations*

9. F. Shahzad, M. Wittmann, M. Kreutzer, T. Zeiser, G. Hager, and G. Wellein. *Parallel Processing Letters* 23(04), 1340011-1340030 (2013). DOI: 10.1142/S0129626413400112  
*A survey of checkpoint/restart techniques on distributed memory systems*
10. M. Wittmann, T. Zeiser, G. Hager, and G. Wellein. *Comput. Math. Appl.* 65, 6 (March 2013), 924-935. DOI: 10.1016/j.camwa.2012.05.002  
*Comparison of Different Propagation Steps for Lattice Boltzmann Methods.*
11. J. Habich, C. Feichtinger, H. Köstler, G. Hager, and G. Wellein. *Computers & Fluids*, 80, 276 – 282 (2013). DOI:10.1016/j.compfluid.2012.02.013  
*Performance engineering for the Lattice Boltzmann method on GPGPUs: Architectural requirements and performance results.*
12. J. Treibig, G. Hager, H. G. Hofmann, J. Hornegger, and G. Wellein. *International Journal of High Performance Computing Applications*, 27 (2), 162 – 177 (2013). DOI: 10.1177/1094342012442424.  
*Pushing the limits for medical image reconstruction on recent standard multicore processors.*
13. H. Fehske, S. Ejima, G. Wellein, and A. R. Bishop. *J. Phys.: Conf. Ser.* 391, 012152 (2012).  
*Metal-insulator transition in the Edwards model*
14. G. Schubert, H. Fehske, G. Hager, and G. Wellein. *Parallel Processing Letters* 21(3), 339-358 (2011). DOI: 10.1142/S0129626411000254  
*Hybrid-parallel sparse matrix-vector multiplication with explicit communication overlap on current multicore-based systems*
15. C. Feichtinger, J. Habich, H. Köstler, G. Hager, U. Rude and G. Wellein. *Parallel Computing*, 37 (9), 536–549 (2011). DOI 10.1016/j.parco.2011.03.005  
*A Flexible Patch-Based Lattice Boltzmann Parallelization Approach for Heterogeneous GPU/CPU Cluster*
16. J. Habich, T. Zeiser, G. Hager, G. Wellein. *Advances in Engineering Software and Computers & Structures* 42 (5), 266–272 (2011). DOI:10.1016/j.advengsoft.2010.10.007  
*Performance analysis and optimization strategies for a D3Q19 Lattice Boltzmann Kernel on nVIDIA GPUs using CUDA*
17. H. Fehske, G. Wellein, A. R. Bishop. *Phys. Rev. B* 83, 075104 (2011).  
*Spatiotemporal evolution of polaronic states in finite quantum systems.*
18. J. Treibig, G. Wellein, G. Hager. *Journal of Computational Science* 2 (2), 130-137 (2011). DOI 10.1016/j.jocs.2011.01.010  
*Efficient multicore-aware parallelization strategies for iterative stencil computations.*

19. M. Wittmann, G. Hager, J. Treibig. *Parallel Processing Letters* **20** (4), 359-376 (2010).  
DOI 10.1142/S0129626410000296  
*Leveraging shared caches for parallel temporal blocking of stencil codes on multicore processors and clusters.*
20. T. Zeiser, G. Hager and G. Wellein. *Parallel Processing Letters* **19** (4), 491-511 (2009)  
DOI:10.1142/S0129626409000389  
*Benchmark analysis and application results for lattice Boltzmann simulations on NEC SX vector and Intel Nehalem systems*
21. H. Fehske, J. Schleede, G. Schubert, G. Wellein, V. S. Filinov and A. R. Bishop. *Phys. Lett. A* **373**, 2182 (2009).  
*Numerical approaches to time evolution of complex quantum systems*
22. G. Hager, T. Zeiser and G. Wellein. *Parallel Processing Letters* **18**, 471 (2008).  
*Data access characteristics and optimizations for SUN ULTRASPARC T2 and T2+ systems*
23. S. Donath, K. Iglberger, G. Wellein, T. Zeiser, A. Nitsure and U. Rde. *Int. J. of Computational Science and Engineering* **4**, 3 (2008).  
*Performance comparison of different parallel lattice Boltzmann implementations on multi-core multi-socket systems*
24. G. Wellein, H. Fehske, A. Alvermann and D. Edwards. *Phys. Rev. Lett.* **101**, 136402 (2008).  
*Correlation-induced metal insulator transition in a two-channel fermion-boson model*
25. T. Zeiser, G. Wellein, A. Nitsure, K. Iglberger and G. Hager. *Progr. in Comp. Fluid Dyn.*, **8:1-4** (2008) 179-188.  
*Introducing a parallel cache oblivious blocking approach for the lattice Boltzmann method*
26. H. Fehske, G. Wellein, J. Loos and A. R. Bishop. *Phys. Rev. B* **77**, 085117 (2008).  
*Localized polarons and doorway vibrons in finite quantum structures*
27. B. Bergen, G. Wellein, F. Hlsemann and U. Rde. *Int. J. of Parallel, Emergent and Distributed Systems* **22**, 311 (2007).  
*Hierarchical hybrid grids: achieving TERAFL0P performance on large finite element simulations*
28. M. Hohenadler, G. Hager, G. Wellein and H. Fehske. *J. Phys.: Condens. Matter* **19**, 255202 (2007).  
*Carrier-density effects in many-polaron systems*
29. M. Hohenadler, G. Wellein, A. Alvermann and H. Fehske. *Physica B* **378-380**, 64 (2006).  
*Many-polaron problem by cluster perturbation theory*

30. G. Wellein, A. R. Bishop, M. Hohenadler, G. Schubert and H. Fehske. *Physica B* **378-380**, 281 (2006).  
*Optical response of many-polaron systems*
31. H. Fehske, G. Hager, G. Wellein and E. Jeckelmann. *Physica B* **378-380**, 319 (2006).  
*Hole doped Hubbard ladders*
32. M. Hohenadler, G. Wellein, A. R. Bishop, A. Alvermann and H. Fehske. *Phys. Rev. B* **74**, 245120 (2006).  
*Spectral signatures of the Luttinger liquid to charge-density-wave transition*
33. A. Weiße, G. Wellein, A. Alvermann and H. Fehske. *Rev. Mod. Phys.* **78**, 275 (2006).  
*The Kernel Polynomial Method*
34. G. Wellein, T. Zeiser, G. Hager and S. Donath. *Computer & Fluids* **35**, 910 (2006).  
*On the Single Processor Performance of Simple Lattice Boltzmann Kernels*
35. M. Hohenadler, D. Neuber, W. von der Linden, G. Wellein, J. Loos and H. Fehske. *Phys. Rev. B* **71**, 245111 (2005).  
*Photoemission spectra of many-polaron systems*
36. G. Schubert, G. Wellein, A. Weiße, A. Alvermann and H. Fehske. *Phys. Rev. B* **72**, 104304 (2005).  
*Optical absorption activated transport in polaronic systems*
37. S. Sykora, A. Hübsch, K.W. Becker, G. Wellein and H. Fehske. *Phys. Rev. B* **71**, 045112 (2005).  
*Single-particle excitation and phonon softening in the one-dimensional Holstein model*
38. G. Hager, G. Wellein, E. Jeckelmann and H. Fehske. *Phys. Rev. B* **71**, 075108 (2005).  
*Stripe formation in doped Hubbard ladders*
39. H. Fehske, G. Wellein, G. Hager, A. Weiße, K. W. Becker and A.R. Bishop. *Physica B* **359-361**, 699 (2005).  
*Luttinger liquid versus charge density wave behaviour in the one-dimensional spinless fermion Holstein model*
40. H. Fehske, G. Wellein, G. Hager, A. Weiße and A.R. Bishop. *Phys. Rev. B* **69**, 165115 (2004).  
*Quantum lattice dynamical effects on the single-particle excitations in one-dimensional Mott and Peierls insulators*
41. G. Hager, E. Jeckelmann, H. Fehske and G. Wellein. *J. Comp. Phys.*, **194-2**, 795-808 (2004).  
*Parallelization strategies for density matrix renormalization group algorithms on shared-memory systems*

42. R. Rabenseifner and G. Wellein. The International Journal of High Performance Computing Applications **17**, No. 1, Spring 2003, 49-62 (2003).  
*Communication and Optimization Aspects of Parallel Programming Models on Hybrid Architectures*
43. H. Fehske, A. P. Kampf, M. Sekania and G. Wellein. Eur. Phys. J. B **31**, 11-16 (2003).  
*Nature of the Peierls- to Mott-insulator transition in 1D*
44. H. Fehske, G. Wellein, A. Weiße, F. Göhmann, H. Büttner and A. R. Bishop. Physica B **312-313**, 562 (2002).  
*Peierls-insulator Mott-insulator transition in 1D*
45. H. Fehske, M. Kinatader, G. Wellein and A. R. Bishop. Phys. Rev. B **63**, 245121 (2001).  
*Quantum lattice effects in mixed-valence transition-metal chain complexes*
46. H. Fehske, J. Loos and G. Wellein. Phys. Rev. B **61**, 8016 (2000).  
*Lattice polaron formation: Effects of non-screened electron-phonon interaction*
47. A. Weiße, H. Fehske, G. Wellein and A. R. Bishop. Phys. Rev. B **62**, R747 (2000).  
*Optimized phonon approach for the diagonalization of electron-phonon problems*
48. H. Fehske, G. Wellein, H. Büttner, A. R. Bishop and M. I. Salkola. Physica B **281-282**, 673 (2000).  
*Local mode behaviour in quasi-1D CDW systems*
49. B. Büchner, H. Fehske, A. P. Kampf and G. Wellein. Physica B **259-261**, 956 (1999).  
*Lattice dimerization for the spin-Peierls compound CuGeO<sub>3</sub>*
50. H. Fehske, G. Wellein and H. Büttner. J. Supercond., **12**, 65 (1999).  
*Pairing susceptibility of strongly correlated electrons weakly coupled to the lattice*
51. A. Weiße, G. Wellein and H. Fehske. Phys. Rev. B **60**, 6566 (1999).  
*Quantum lattice fluctuations in a frustrated Heisenberg spin-Peierls chain*
52. B. Bäuml, G. Wellein and H. Fehske. Phys. Rev. B **58**, 3663 (1998).  
*Optical absorption and single-particle excitations in the 2D Holstein t-J model*
53. G. Wellein and H. Fehske. Phys. Rev. B **58**, 6208 (1998).  
*On the self-trapping problem of electrons or excitons in one dimension*
54. G. Wellein, H. Fehske and A. P. Kampf. Phys. Rev. Lett. **81**, 3956 (1998).  
*Peierls dimerization with non-adiabatic spin-phonon coupling*
55. G. Wellein and H. Fehske. Phys. Rev. B **56**, 4513 (1997).  
*Polaron band formation in the Holstein model*
56. G. Wellein, H. Fehske, H. Büttner and A. R. Bishop. Physica C **282-287**, 1827 (1997).  
*On the stability of polaronic superlattices in strongly coupled electron-phonon systems*

57. H. Fehske, G. Wellein, B. Bäuml and R. N. Silver. *Physica C* **282-287**, 1829 (1997).  
*Spectral properties of the 2D Holstein  $t$ - $J$  model*
58. H. Fehske, J. Loos and G. Wellein. *Z. Phys. B* **104**, 619 (1997).  
*Spectral properties of the 2D Holstein polaron*
59. H. Fehske, G. Wellein, B. Bäuml and H. Büttner. *Physica B* **230-232**, 899 (1997).  
*Polaronic effects in strongly coupled electron-phonon systems: Exact diagonalization results for the 2D Holstein  $t$ - $J$  model*
60. G. Wellein, H. Röder and H. Fehske. *Phys. Rev. B* **52**, 9666 (1996).  
*Polarons and bipolarons in strongly interacting electron-phonon systems*
61. H. Fehske, H. Röder, G. Wellein and A. Mistriotis. *Phys. Rev. B* **51**, 16582 (1995).  
*Hole-polaron formation in the 2D Holstein- $t$ - $J$  model: A variational Lanczos study*

## Conference Proceedings

62. J. Hammer, G. Hager, J. Eitzinger, and G. Wellein. **Accepted** for PMBS15, the 6th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems, in conjunction with ACM/IEEE Supercomputing 2015 (SC15), November 16, 2015, Austin, TX.  
*Automatic Loop Kernel Analysis and Performance Modeling With Kerncraft*
63. J. Hofmann, D. Fey, J. Eitzinger, G. Hager, and G. Wellein. **Accepted** for PPAM 2015, the 11th International Conference on Parallel Processing and Applied Mathematics, September 3-6, 2015, Krakow, Poland.  
*Performance analysis of the Kahan-enhanced scalar product on current multicore processors*
64. F. Shahzad, M. Kreutzer, T. Zeiser, R. Machado, A. Pieper, G. Hager, G. Wellein. **Accepted** for FTS 2015, the 1st International Workshop on Fault-Tolerant Systems, in conjunction with IEEE Cluster 2015, September 8, 2015, Chicaco, IL.  
*Building a fault tolerant application using the GASPI communication layer*
65. Holger Stengel, Jan Treibig, Georg Hager, and Gerhard Wellein. 2015. In Proceedings of the 29th ACM on International Conference on Supercomputing (ICS '15). ACM, New York, NY, USA, 207-216. DOI: 10.1145/2751205.2751240  
*Quantifying Performance Bottlenecks of Stencil Computations Using the Execution-Cache-Memory Model*
66. M. Kreutzer, G. Hager, G. Wellein, A. Pieper, A. Alvermann, and H. Fehske. In Parallel and Distributed Processing Symposium (IPDPS), 2015 IEEE International , vol., no., pp.417-426, 25-29 May 2015. DOI: 10.1109/IPDPS.2015.76  
*Performance Engineering of the Kernel Polynomial Method on Large-Scale CPU-GPU Systems*

67. T. Röhl, J. Treibig, G. Hager, and G. Wellein. In Parallel Processing Workshops (ICPPW), 2014 43rd International Conference on , vol., no., pp.176-185, 9-12 Sept. 2014. DOI: 10.1109/ICPPW.2014.34  
*Overhead Analysis of Performance Counter Measurements*
68. A. Alvermann, A. Basermann, H. Fehske, Martin Galgon, G. Hager, M. Kreutzer, L. Krämer, B. Lang, A. Pieper, M. Röhrig-Zöllner, F. Shahzad, J. Thies, and G. Wellein. . In: L. Lopes et al. (Eds.): Euro-Par 2014 Workshops, Part II, LNCS 8806, 577-588 (2014). DOI: 10.1007/978-3-319-14313-2\_49  
*ESSEX: Equipping Sparse Solvers for Exascale*
69. J. Hofmann, J. Treibig, G. Hager, and G. Wellein. 2014. In Proceedings of the 2014 Workshop on Programming models for SIMD/Vector processing (WPMVP '14). ACM, New York, NY, USA, 57-64. DOI: 10.1145/2568058.2568068  
*Comparing the performance of different x86 SIMD instruction sets for a medical imaging application on modern multi- and manycore chips*
70. F. Shahzad, M. Wittmann, T. Zeiser, G. Hager, and G. Wellein. In Parallel and Distributed Processing Symposium Workshops & PhD Forum (IPDPSW), 2013 IEEE 27th International , vol., no., pp.1708-1716, 20-24 May 2013. DOI: 10.1109/IPDPSW.2013.145  
*An Evaluation of Different IO Techniques for Checkpoint/Restart*
71. J. Treibig, G. Hager, and G. Wellein. Euro-Par 2012: Parallel Processing Workshops, Lecture Notes in Computer Science 7640, 451-460 (2013), Springer, ISBN 978-3-642-36948-3. DOI: 10.1007/978-3-642-36949-0\_50.  
*Performance patterns and hardware metrics on modern multicore processors: Best practices for performance engineering*
72. K. Sembritzki, G. Hager, B. Krammer, J. Treibig, and G. Wellein. Proceedings of PGAS '12, The 6th Conference on Partitioned Global Address Space Programming Models, Oct 10-12, 2012, Santa Barbara, CA, USA.  
*Evaluation of the Coarray Fortran Programming Model on the Example of a Lattice Boltzmann Code*
73. J. Treibig, G. Hager, and G. Wellein. Euro-Par 2012: Parallel Processing Workshops, Lecture Notes in Computer Science 7640, 451-460 (2013), Springer, ISBN 978-3-642-36948-3. DOI: 10.1007/978-3-642-36949-0\_50.  
*Performance patterns and hardware metrics on modern multicore processors: Best practices for performance engineering*
74. M. Kreutzer, G. Hager, G. Wellein, H. Fehske, A. Basermann, and A.R. Bishop. Parallel and Distributed Processing Symposium Workshops & PhD Forum (IPDPSW), 2012 IEEE 26th International Parallel & Distributed Processing Symposium, pp.1696-1702, 21-25 May 2012. DOI: 10.1109/IPDPSW.2012.211  
*Sparse matrix-vector multiplication on GPGPU clusters: A new storage format and a scalable implementation*

75. G. Schubert, G. Hager, H. Fehske and G. Wellein. Parallel and Distributed Processing Workshops and Phd Forum (IPDPSW), 2011 IEEE International Symposium on Parallel and Distributed Processing, pp.1751-1758, 16-20 May 2011. DOI: 10.1109/IPDPS.2011.332  
*Parallel sparse matrix-vector multiplication as a test case for hybrid MPI+OpenMP programming*
76. G. Hager, G. Schubert, T. Schoenemeyer, and G. Wellein. Proc. Cray Users Group Conference 2011 (CUG 2011), May 23-26, 2011, Fairbanks, AK  
*Prospects for Truly Asynchronous Communication with Pure MPI and Hybrid MPI/OpenMP on Current Supercomputing Platforms.*
77. J. Treibig, G. Hager and G. Wellein. Proceedings of PSTI2010, the First International Workshop on Parallel Software Tools and Tool Infrastructures, San Diego CA, September 13, 2010. DOI: 10.1109/ICPPW.2010.38  
*LIKWID: A lightweight performance-oriented tool suite for x86 multicore environments*
78. M. Wittmann, G. Hager and G. Wellein. Parallel & Distributed Processing, Workshops and Phd Forum (IPDPSW), 2010 IEEE International Symposium on Parallel and Distributed Processing, pp.1-7, 19-23 April 2010. DOI: 10.1109/IPDPSW.2010.5470813  
*Multicore-aware parallel temporal blocking of stencil codes for shared and distributed memory*
79. G. Wellein, G. Hager, T. Zeiser, M. Wittmann, H. Fehske. Proceedings of 2009 33rd Annual IEEE International Computer Software and Applications Conference. IEEE Computer Society (2009), p. 579-586. DOI 10.1109/COMPSAC.2009.82  
*Efficient temporal blocking for stencil computations by multicore-aware wavefront parallelization*
80. J. Habich, T. Zeiser, G. Hager, and G. Wellein. Proceedings of the First International Conference on Parallel, Distributed and Grid Computing for Engineering (PARENG2009 Pécs, Hungary 6-8.April.2009). Civil-Comp, ISBN 978-1-905088-29-4 (2009), pp. 17.  
*Speeding up a Lattice Boltzmann Kernel on nVIDIA GPUs.*
81. T. Zeiser, G. Hager and G. Wellein, Parallel & Distributed Processing, 2009. IPDPS 2009. IEEE International Symposium on Parallel and Distributed Processing, pp.1-8, 23-29 May 2009. DOI: 10.1109/IPDPS.2009.5161089  
*The world's fastest CPU and SMP node: Some performance results from the NEC SX-9*
82. G.Hager, T. Zeiser and G. Wellein, Parallel and Distributed Processing, 2008. IPDPS 2008. IEEE International Symposium on Parallel and Distributed Processing, pp.1-7, 14-18 April 2008. DOI: 10.1109/IPDPS.2008.4536341  
*Data access optimizations for highly threaded multi-core CPUs with multiple memory controllers*



83. G. Wellein, P. Lammers, G.Hager, S. Donath and T. Zeiser. Proceedings of the 2005 International Conference on Parallel Computational Fluid Dynamics. Elsevier, ISBN 978-0444522061 (2006), 31-40.  
*Towards Optimal Performance for Lattice Boltzmann Applications on Terascale Computer*
84. G. Hager, E. Jeckelmann, H. Fehske und G. Wellein. In: H.G. Bock et al., Modelling, Simulation and Optimization of Complex Processes. Springer, ISBN 3-540-23027-0 (2005), 165-177.  
*Exact numerical Treatment of Finite Quantum Systems using Leading-Edge Supercomputers*
85. R. Rabenseifner and G. Wellein. In: H.G. Bock et al., Modelling, Simulation and Optimization of Complex Processes. Springer, ISBN 3-540-23027-0 (2005), 409-426.  
*Comparison of Parallel Programming Models on Clusters of SMP Nodes*
86. T. Pohl, F. Deserno, N. Thürey, U. Rüde, P. Lammers, G. Wellein and T. Zeiser. Proceedings of the IEEE/ACM SC2004 Conference (Supercomputing Conference '04, Pittsburgh, 06. - 12.11.2004). ISBN 0-7695-2153-3 (2004), 1-13.  
*Performance Evaluation of Parallel Large-Scale Lattice Boltzmann Applications on Three Supercomputing Architectures*
87. G. Wellein, G. Hager, A. Basermann and H. Fehske. In: J. Palma et al., High Performance Computing for Computational Science - VECPAR2002. Springer, ISBN 3-540-00852-7 (2003), 287-301.  
*Fast sparse matrix-vector multiplication for TFlops computers*

### Invited Contributions

88. G. Hager and G. Wellein. Lect. Notes Phys. **739**, 681–730 (2008).  
*Architectures and Performance Characteristics of Modern High Performance Computers*
89. G. Hager and G. Wellein. Lect. Notes Phys. **739**, 731–767 (2008).  
*Optimization Techniques for Modern High Performance Computers*
90. H. Fehske, A. Alvermann, M. Hohenadler and G. Wellein. Proceedings Int. School of Physics “Enrico Fermi”, Course CLXI, Polarons in Bulk Materials and Systems with Reduced Dimensionality. IOS Press (2006), 313-325.  
*Spectral Signatures of Holstein Polarons*
91. G. Hager, T. Zeiser, J. Treibig and G. Wellein. In: E. Krause et al., Computational Science and High Performance Computing II. Springer, ISBN 3-540-31767-8 (2006), 273-287.  
*Optimizing Performance on Modern HPC Systems: Learning From Simple Kernel Benchmarks*

92. P. Lammers, G. Wellein, Th. Zeiser, G. Hager and M. Breuer. In M. Resch et al., High Performance Computing on Vector Systems. Springer, ISBN 3-540-29124-5 (2006), 25-37.  
*Have the vectors the continuing ability to parry the attack of the killer micros?*
93. S. Donath, T. Zeiser, G. Hager, J. Habich and G. Wellein. In: F. Hülsemann et al., Frontiers in Simulation: Simulationstechnique - 18th Symposium in Erlangen, September 2005 (ASIM). SCS Publishing House (2005), 728-735.  
*Optimizing Performance of the Lattice Boltzmann Method for Complex Structures on Cache-based Architectures*

### Other contributions

94. J. Treibig, G. Hager, and G. Wellein. In: C. Bischof et al. (eds.), Competence in High Performance Computing 2010. Springer, ISBN 978-3-642-24025-6 (2012), 165-175.  
DOI: 10.1007/978-3-642-24025-6\_14  
*LIKWID performance tools*
95. J. Treibig, G. Hager and G. Wellein. In: S. Wagner et al., High Performance Computing in Science and Engineering, Garching/Munich 2009. Springer, ISBN 978-3642138713 (2010), 3–12. DOI: 10.1007/978-3-642-13872-0\_1  
*Complexities of Performance Prediction for Bandwidth-Limited Loop Kernels on Multi-Core Architectures*
96. G. Hager, H. Stengel, T. Zeiser and G. Wellein. In: S. Wagner et al., High Performance Computing in Science and Engineering, Garching/Munich 2007: Transactions of the Third Joint HLRB and KONWIHR Status and Result Workshop, Dec. 3-4, 2007, Leibniz Supercomputing Centre, Garching/Munich, Germany. Springer, ISBN 978-3-540-69181-5 (2009), 485-501.  
*RZBENCH: Performance evaluation of current HPC architectures using low-level and application benchmarks*
97. A. Alvermann, H. Fehske and G. Wellein. In: S. Wagner et al., High Performance Computing in Science and Engineering, Garching/Munich 2007: Transactions of the Third Joint HLRB and KONWIHR Status and Result Workshop, Dec. 3-4, 2007, Leibniz Supercomputing Centre, Garching/Munich, Germany. Springer, ISBN 978-3-540-69181-5 (2009), 485-501.  
*Quantum transport within a background medium: Fluctuations versus Correlations*
98. T. Zeiser, G. Hager and G. Wellein. In: W. Nagel et al., High Performance Computing in Science and Engineering '08: Transactions of the High Performance Computing Center, Stuttgart (HLRS) 2008. Springer, ISBN 978-3-540-88301-2 (2009), 333-347.  
*Vector Computers in a World of Commodity Clusters, Massively Parallel Systems and Many-Core Many-Threaded CPUs: Recent Experience Based on an Advanced Lattice Boltzmann Flow Solver*

99. M. Stürmer, G. Wellein, G. Hager, H. Köstler and U. Rude. In: S. Wagner et al., High Performance Computing in Science and Engineering, Garching/Munich 2007: Transactions of the Third Joint HLRB and KONWIHR Status and Result Workshop, Dec. 3-4, 2007, Leibniz Supercomputing Centre, Garching/Munich, Germany. Springer, ISBN 978-3-540-69181-5 (2009), 551-566.  
*Challenges and potentials of emerging multicore architectures.*
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