

Publications from DOE ASCR-supported Research

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This is a list of publications and talks resulting from DOE ASCR-supported research.

Journal Articles and Book Chapters (not updated any more. look into the next items for the list)

- Kwan-Liu Ma, Greg Schussman and Brett Wilson, [Visualization for Computational Accelerator Physics \(In Book\) Visualization Handbook](#), October 2004, pp 901--918, [ISBN 012387582X](#)
- Lie-Quan Lee et al, [Achievements in ISICs/SAPP collaborations for electromagnetic modeling of accelerators](#), J. Phys.: Conf. Ser. 16 (2005) 205-209
- Chao Yang, Weiguo Gao, Zhaojun Bai, Xiaoye Li, Lie-Quan Lee, Parry Husbands, and Esmond Ng, [An Algebraic Sub-structuring for Large-scale Eigenvalue Calculation](#), SIAM Journal On Scientific Computing, 27, 873 (2005)
- Volkan Akcelik, George Biros, Omar Ghattas, David Keyes, Kwok Ko, Lie-Quan Lee and Esmond G Ng, [Adjoint methods for electromagnetic shape optimization of the low-loss cavity for the International Linear Collider](#), J. Phys.: Conf. Ser. 16 (2005) 435-445
- Lie-Quan Lee et al, [Enabling technologies for petascale electromagnetic accelerator simulation](#), 2007 J. Phys.: Conf. Ser. 78 012040 (5pp)
- X.S. Li, J. Demmel, L. Grigori, M. Gu, J. Xia, S. Jardin, C. Sovinec, L-Q. Lee, [Enhancing Scalability of Sparse Direct Methods](#), 2007 J. Phys.: Conf. Ser. 78 012041 (5pp)
- Volkan Akcelik, Kwok Ko, Lie-Quan Lee, Zenghai Li, Cho-Kuen Ng, Liling Xiao, [Shape determination for deformed electromagnetic cavities](#), Journal of Computational Physics, 227 (3), Pages 1722-1738, 2008

Ph.D. Thesis

- Greg L. Schussman, [Interactive and Perceptually Enhanced Visualization of Large, Complex Line-Based Datasets](#), PhD thesis, University of California Davis, December 2003.
- Yong Sun, [The filter algorithm for solving large-scale eigenproblems from accelerator simulations](#), PhD thesis, Stanford University, September 2003.

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- Ben-Shan Liao, Zhaojun Bai, Lie-Quan Lee, and Kwok Ko, Nonlinear Rayleigh-Ritz Iterative Method for Solving Large-Scale Nonlinear Eigenvalue Problems, to be appeared, Taiwan Journal of Mathematics on matrix eigenvalue computation and applications, 2010
- Xiao-Juan Luo, Mark S. Shephard, Lie-Quan Lee, Lixin Ge, and Cho Ng, Moving Curved Mesh Adaptation for Higher Order Finite Element Simulations, Journal of Engineering with Computers, 2010, DOI: 10.1007/s00366-010-0179-5
- Arno Candel, Zenghai Li, Andreas Kabel, Liequan Lee, Cho Ng, Vineet Rawat, Greg Schussman and Kwok Ko, Modeling the Compact Linear Collider Two-Beam Accelerator Design with ACE3P, to be in the 25th International Linear Accelerator Conference, LINAC10, Tsukuba, Japan, September 12-17 2010
- Cho Ng, Joel England, Lie-Quan Lee, Bob Noble, Vineet Rawat, James Spencer, Propagation and Radiation of a Photonic Bandgap Accelerating Mode, Advanced Accelerator Concepts Workshop, Annapolis, Maryland, June 13-19, 2010
- Cho Ng, et al, Advances in Parallel Electromagnetics Codes for the Accelerator Community, Advanced Accelerator Concepts Workshop, Annapolis, Maryland, June 13-19, 2010
- Arno Candel, Zenghai Li, Andreas Kabel, Liequan Lee, Cho Ng, Vineet Rawat, Greg Schussman and Kwok Ko, Numerical Simulation of Wakefield Damping and Power Transfer in the CLIC Two-Beam Accelerator, Advanced Accelerator Concepts Workshop, Annapolis, Maryland, June 13-19, 2010
- K. Bane, L. Lee, C. Ng, G. Stupakov, L. Wang, L. Xiao, PEP-X IMPEDANCE AND INSTABILITY CALCULATIONS, Tech. Report., SLAC-PUB-14151, 2010
- K. Bane, L. Lee, C. Ng, G. Stupakov, L. Wang, L. Xiao, PEP-X impedance and instability calculations, The 1st International Particle Accelerator Conference, IPAC'10, Kyoto, Japan, May 23-28, 2010
- L. Wang, L. Lee, G. Stupakov, A TWO-DIMENSIONAL FEM CODE FOR IMPEDANCE CALCULATION IN HIGH FREQUENCY DOMAIN, The 1st International Particle Accelerator Conference, IPAC'10, Kyoto, Japan, May 23-28, 2010

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- Lie-Quan Lee, Arno Candel, Arno, Cho Ng, and Kwok Ko, A moving window technique in parallel finite element time domain electromagnetic simulation, SLAC-PUB-14099, 2010

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- Lie-Quan Lee, Zenghai Li, Cho Ng, and Kwok Ko, [Omega3P: A Parallel Finite-Element Eigenmode Analysis Code for Accelerator Cavities](#), Tech. Report., SLAC-PUB-13529, 2009
- Lie-Quan Lee, et al, Parallel Computing for Accelerator Design and Modeling, SIAM Conference on Computational Science and Engineering 2009, Miami, Florida, March 2-6, 2009
- Lie-Quan Lee, Arno Candel, Andreas Kabel, and Zenghai Li, A Projection Method for Discretized Electromagnetic Fields on Unstructured Meshes, SIAM Conference on Computational Science and Engineering 2009, Miami, Florida, March 2-6, 2009
- Lixin Ge, Lie-Quan Lee, Arno Candel, Cho-Kuen Ng, Kwok Ko, Xiaojuan Luo, and Mark S. Shephard, Moving Window Algorithm for Parallel Short-Range Wakefield Computations in Particle Accelerators on Unstructured Grids, SIAM Conference on Computational Science and Engineering 2009, Miami, Florida, March 2-6, 2009
- Volkan Akcelik, Lie-Quan Lee, Z. Li, Cho Ng, L. Xiao, and K. Ko, PDE Constrained Optimization for the Design and Quality Control of Accelerator Cavities, SIAM Conference on Computational Science and Engineering 2009, Miami, Florida, March 2-6, 2009
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- A.C. Kabel, D.S. Yershov, Using Commodity Graphic Processing Units (GPUs) for High-Speed Storage Ring Simulations, PAC09
- V. Akcelik, K. Ko, L. Lee, Z. Li, C.-K. Ng, G. Cheng, R.A. Rimmer, H. Wang, Thermal Analysis of SCRF Cavity Couplers Using Parallel Multi-Physics Tools TEM3P, PAC09
- Liling Xiao, Volkan Akcelik, Arno Candel, Lixin Ge, Andreas Kabel, Kwok Ko, Lie-Quan Lee, Zenghai Li, Cho Ng, Greg Schussman, PARALLEL FINITE ELEMENT MODELING TOOLS FOR ERL DESIGN AND ANALYSIS, ERL09, 45th ICFA Beam Dynamics Workshop, June 8-12, 2009
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- Lie-Quan Lee, W. Gao, C. Yang, E. Ng, B. Liao, and Z. Bai, Solving Nonlinear Eigenproblems for International Linear Collider, SIAM Conference on Computational Science & Engineering, Costa Mesa, California, February 18-23, 2007
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