

**Curriculum Vitae**  
DAVID WHITTUM  
*physicist*

**Education**

Ph.D., Physics, University of California, Berkeley  
A.B., Physics and Mathematics, Harvard

**Present Position:** Manager, Microwave Applied Research, responsible for design, build and test of new accelerator prototypes, transition to production, consultation for production support

**Professional Experience**

Senior Microwave Engineer, Varian Medical Systems, 2001-2006  
Assistant Professor, High Energy Physics Faculty, Stanford University, 1994 –2001  
Research Assistant Professor (*joshu*), KEK, (MONBUSHO), Japan 1993 - 1994  
Staff Scientist, Lawrence Berkeley Laboratory, 1993  
Postdoctoral Researcher (JSPS/NSF), KEK Tsukuba Japan 1991-1993

**Honors, Awards**

Fellow, American Physical Society, 2000  
Senior Member, Institute of Electrical and Electronics Engineers, 2000  
Outstanding Doctoral Thesis, Beam Physics, American Physical Society, 1992

**Licensure, Memberships**

Professional Engineer, State of California, License #E17812  
National Society of Professional Engineers  
American Association of Physicists in Medicine  
Acoustical Society of America  
National Association of Environmental Professionals

**Professional Development**

- Image Guided Radiation Short Course Oct '05 and Nov '06, Stanford Cancer Center
- Advanced Project Management Coursework, Cadence Management, in the areas of Interpersonal Negotiations ('03), Risk Management ('04), Project Management ('04)
- Training in Electrical and Laser Safety, Radiological Worker

**Teaching Experience**

·Applied Physics and Physics Departments, Stanford University 1994-2000  
·US Particle Accelerator Schools 1995-2006: Univ. Washington, Seattle, Univ. of California at Berkeley, Vanderbilt University, UCLA, College of William and Mary, Arizona State University  
·International Particle Accelerator Schools: RF Engineering for Particle Accelerators, Joint US-CERN-JAPAN School, Shonan, Japan, '96, NATO Advanced Study Institute on Techniques and Concepts of High-Energy Physics, St. Croix, USVI, June '98, Microwave Linear Accelerators, China Center for Accelerator Science and Technology, Beijing '98

·Teaching assistant, introductory physics courses, 1983-1986; Tutor, Bureau of Study Counsel, Harvard, 1981-1982; Tutor, Math Question Center, Harvard, 1981

### **Professional Community Service**

Committee service on ICFA Beam Dynamics Panel, 1999 - 1999 IEEE Particle Accelerator Conference, Program Committee - US-CERN-Japan Joint Accelerator School '97 & '98, Program Committee - APS Division of Plasma Physics '97 Annual Meeting, Program Committee - APS Spring Meeting '96, '98 - Snowmass '96, Advanced Accelerator Subgroup. Past activities also include proposal and site reviews for US Dept. of Energy, refereeing for journals, early web work for APS Division of Physics of Beams

### **Popular Articles**

[1]Andrew Marienhoff Sessler, Physicist, A Student's Guide to the Couplings of a Beam Physicist with His Environment, David H. Whittum, in *The Physics of Beams*, W. A. Barletta, ed., AIP Conf. Proc. 351 (AIP, New York, 1996) pp. 101-119.

[2]Introduction to electrodynamics for microwave linear accelerators, D. Whittum, in *Frontiers of Accelerator Technology*, S.I. Kurokawa, M. Month and S. Turner, eds., (World Scientific, Singapore, 1999), pp. 1-135.

[3]Introduction to microwave linacs, D. Whittum, in *Techniques and Concepts of High-Energy Physics*, T. Ferbel, ed. (Kluwer, Amsterdam, 1999) Vol. X, pp. 387-486.

[4]mm-Wave Accelerators, D. Whittum, in *Handbook of Accelerator Physics and Engineering*, A.W. Chao and M. Tigner, eds. (World Scientific, Singapore, 1999) pp. 541-543

### **Invited Talks**

[1]Theory of the Ion-Channel Laser, Bull. Am. Phys. Soc. 37, 992 (1992), APS Conference, Washington DC, April 1992.

[2]Electron-positron plasmas: collective frequency-shifting and Comptonization, Internat'l Workshop on Acceleration and Radiation Generation in Space and Laboratory Plasmas, Kardamyli, Greece, August '93.

[3]High-Energy Electron Beam Dynamics in Plasma, David H. Whittum, Bull. Am. Phys. Soc. 39, 1160 (1994), APS Conference, Crystal City, Virginia, April 1994.

[4]mm-Wave Accelerators, Accelerator Working Group, Snowmass Workshop, Snowmass, Colorado, June '96

[5]Report on the Snowmass Advanced Accelerator Technologies Working Group Advanced Accelerator Concepts Workshop, Lake Tahoe, California, October '96.

[6]mm-Wave Drivers for Future Linear Colliders, Conference on Infrared and Millimeter Waves, Wintergreen, Virginia, July '97.

[7]High-Gradient Accelerator Research, 2nd International Workshop on Electron-Electron Interactions at TeV Energies, Santa Cruz, California, September '97.

[8]New Perspectives on the Limits of Solid-State Accelerators, Advanced Accelerator Concepts Workshop, Baltimore, Maryland, July '98.

[9]Advanced Concepts for High-Gradient Acceleration, 19th International Linear Accelerator Conference (LINAC98), Chicago, Illinois, August, '98

[10]Frontiers of High-Gradient Accelerator Research, 17th International Conference on High-Energy Accelerators (HEACC 98), Dubna, Russia, September '98.

## **Publications**

- [1] Beam break-up in the Two-Beam Accelerator, D.H. Whittum, G.A. Travish, A.M. Sessler, J. DeFord and G. Craig, Proceedings of the 1989 IEEE Particle Accelerator Conference, edited by Floyd Bennett and Joyce Kopta (IEEE, New York, 1989) pp. 1190-1192.
- [2] Plasma compensation effects with relativistic electron beams, B. Autin, A.M. Sessler, and D.H. Whittum, Proceedings of the 1989 IEEE Particle Accelerator Conference, edited by Floyd Bennett and Joyce Kopta (IEEE, New York, 1989) pp. 1812-1814.
- [3] On the reacceleration of bunched beams, D.H. Whittum, A.M. Sessler, G. Craig, J. DeFord and D.U.L. Yu, Advanced Accelerator Concepts, Chan Joshi, editor, AIP Conf. Proc. 193, (AIP, New York, 1989) pp. 433-447.
- [4] A study of phase control in the Two-Beam Accelerator, A.M. Sessler, D.H. Whittum and J.S. Wurtele, Proceedings of the XIV International Conference on High Energy Particle Accelerators, Particle Accelerators 31 (1990) 69.
- [5] Plasma suppression of beamstrahlung, D.H. Whittum, A.M. Sessler, J.J. Stewart, and S.S. Yu, Particle Accelerators 34 (1990) 89.
- [6] Continuous plasma final focus, D.H. Whittum, Nonlinear and Relativistic Effects in Plasmas, V. Stefan, ed., (AIP, New York, 1992) pp. 387-401.
- [7] Ion-channel laser, D.H. Whittum, A.M. Sessler and J.M. Dawson, Phys. Rev. Lett. 64 (1990) 2511.
- [8] Demonstration of the frequency upshifting of microwave radiation by rapid plasma creation, C.J. Joshi, C.E. Clayton, K. Marsh, D.B. Hopkins, A. Sessler, and D. Whittum, IEEE Trans. Plasma Sci. 18 (1990) 814.
- [9] Transverse resistive wall instability in the two-beam accelerator, D.H. Whittum, A.M. Sessler, and V.K. Neil, Phys. Rev. A43 (1991) 294.
- [10] Simulation of a standing-wave free-electron laser, W.M. Sharp, A.M. Sessler, D.H. Whittum, and J.S. Wurtele, Nucl. Instrum. Methods A304 (1991) 487.
- [11] Electron-hose instability in the ion-focused regime, D.H. Whittum, W.M. Sharp, S.S. Yu, M. Lampe and G. Joyce, Phys. Rev. Lett. 67 (1991) 991.
- [12] Standing-wave free-electron laser two-beam accelerator, A. M. Sessler, D.H. Whittum, J.S. Wurtele, W.M. Sharp, and M. A. Makowski, Nucl. Instrum. Methods A306 (1991) 592.
- [13] X-band free-electron laser experiment in the ion-channel guiding regime, S. Hiramatsu, et al., Proceedings of the 8th Symposium on Accelerator Science and Technology, (RIKEN, Saitama, 1991), and X-Band Microwave FEL for TBA Feasibility Study (same authors), in Plasma-Based and Novel Accelerators, R. Sugihara and Y. Nishida, eds., NIFS-PROC-11 (National Institute for Fusion Science, Nagoya, 1992), pp. 153-159.
- [14] Radio-frequency beam conditioner for fast-wave free-electron generators of coherent radiation, A. M. Sessler, D.H. Whittum and L.-H. Yu, Phys. Rev. Lett. 68 (1992) 309.
- [15] Free-electron laser generation of VUV and X-Ray radiation using a conditioned beam and ion-channel focusing, L.-H. Yu, A. M. Sessler and D.H. Whittum, Proceedings of the 13th International Free Electron Laser Conference, Nucl. Instrum. Methods A 318 (1992) 721.

- [16] First result of the KEK X-band free-electron laser in the ion-channel guiding regime, T. Ozaki, et al., Proceedings of the 13th International Free Electron Laser Conference, Nucl. Instrum. Methods A318 (1992) 101.
- [17] Nonlinear, relativistic return current sheath for an ion-focused beam, D.H. Whittum, Phys. Fluids B4 (1992) 476.
- [18] Electromagnetic instability of the ion-focused regime, D.H. Whittum, Phys. Fluids B4 (1992) 730.
- [19] Flute instability of an ion-focused slab electron beam in a broad plasma, D.H. Whittum, M. Lampe, G. Joyce, S.P. Slinker, S.S. Yu, and W. M. Sharp, Phys. Rev. A 46 (1992) 6684.
- [20] Common analysis of the relativistic klystron and the standing-wave free-electron laser two-beam accelerator, J.S. Wurtele, D.H. Whittum and Andrew M. Sessler, Proceedings of the XV International Conference on High Energy Accelerators, Int. J. Mod. Phys. A (Proc. Suppl.) 2A (1993) 508.
- [21] Wiggler-driven hose instability of an ion-focused beam, J.S. Kim, D.H. Whittum and S. Hiramatsu Proceedings of the XV International Conference on High Energy Accelerators, Int. J. Mod. Phys. A (Proc. Suppl.) 2A (1993) 1151.
- [22] X-band ion-focused free-electron laser, D.H. Whittum, K. Ebihara, S. Hiramatsu, Y. Kimura, J. Kishiro, T. Monaka, T. Ozaki, and K. Takayama, Proceedings of the XV International Conference on High Energy Accelerators, Int. J. Mod. Phys. A (Proc. Suppl.) 2A (1993) 888.
- [23] Wakefield accelerator using twin linacs, H. Nakanishi, et al., Nucl. Instrum. Methods A328 (1993) 596.
- [24] Frequency upshifting by an ionization front in a magnetized plasma, C.H. Lai, T.C. Katsouleas, W.B. Mori, and D.H. Whittum, IEEE Trans. Plasma Sci. 21 (1993) 45.
- [25] Experimental studies of microwave amplification in the ion-focused regime, (invited paper) D.H. Whittum, K. Ebihara, S. Hiramatsu, J. Kishiro, T. Monaka, T. Ozaki, and K. Takayama, IEEE Trans. Plasma Sci. 21 (1993) 136.
- [26] Theoretical studies of ion-hose growth in a plasma-focused free-electron laser, D.H. Whittum, S. Hiramatsu, and J.S. Kim, IEEE Trans. Plasma Sci. 21 (1993) 170.
- [27] Electron-hose instability of a relativistic electron beam in an ion-focusing channel, M. Lampe, G. Joyce, S.P. Slinker, and D.H. Whittum, Phys. Fluids B5 (1993) 1888.
- [28] Impedance-based analysis of the relativistic klystron and the standing-wave free-electron laser two-beam accelerator, J. S. Wurtele, D.H. Whittum and A.M. Sessler, Advanced Accelerator Concepts, Jonathan Wurtele, ed., AIP Conf. Proc. 279 (AIP, New York, 1993) 143.
- [29] Suppression of beamstrahlung by means of a plasma, A.M. Sessler and D.H. Whittum, Advanced Accelerator Concepts, Jonathan Wurtele, editor, AIP Conf. Proc. 279 (AIP, New York, 1993) 939.
- [30] X-band ion-focused free-electron laser, S. Hiramatsu, et al., Proceedings of the 14th International Free Electron Laser Conference, Nucl. Instrum. Methods A331 (1993) 113 .
- [31] Cumulative hose instabilities of a magnetically self-focused slab electron beam, D.H. Whittum, Phys. Fluids B 5, 4432 (1993).
- [32] Transverse two-stream instability in a matched plasma channel, D.H. Whittum, Proceedings of the 9th Symposium on Accelerator Science and Technology, (KEK, Tsukuba, 1993) pp. 413-415.

- [33] Beam-Driven and Laser-Driven Plasma Wakefield Acceleration Experiments, A. Ogata, et al., Proceedings of the 9th Symposium on Accelerator Science and Technology, (KEK, Tsukuba, 1993) pp. 471-473.
- [34] Plasma lens and plasma wakefield acceleration experiments using twin linacs, A. Ogata, et al., Proceedings of the 1993 IEEE Particle Accelerator Conference (IEEE, New York, 1994) pp. 3552-3554.
- [35] Impedance formalism for an arbitrary cumulative instability, X.T. Yu, J.S. Wurtele and D.H. Whittum Proceedings of the 1993 IEEE Particle Accelerator Conference (IEEE, New York, 1994) pp. 3399-3401 .
- [36] Multi-bunch beam break-up studies for a SWFEL/TBA, J.S. Kim, et al., Proceedings of the 1993 IEEE Particle Accelerator Conference (IEEE, New York, 1994) pp. 3288-3290.
- [37] An induction linac and pulsed power system at KEK, J. Kishiro, et al., Proceedings of the 1993 IEEE Particle Accelerator Conference (IEEE, New York, 1994) pp. 673-675.
- [38] Plasma lens experiments at the final focus test beam, W. Barletta, et al., Proceedings of the 1993 Particle Accelerator Conference, Washington DC, (IEEE 1994), pp. 2638-2640.
- [39] Plasma wakefield acceleration experiments using twin linacs, A. Ogata, et al., Proceedings of the International Workshop on Acceleration and Radiation Generation in Space and Laboratory Plasmas, Physica Scripta T52, 69 (1994).
- [40] Plasma Wakefield Acceleration in Overdense Regime Driven by Narrow Bunches, A. Ogata, et al., Proceedings of the 1994 International Linac Conference, (KEK, Tsukuba, 1995), p. 801.
- [41] Nonlinear Acceleration Caused by a Plasma Wakefield in an Underdense Regime, A. Ogata, et al., Advanced Accelerator Concepts, P. Schoessow, ed., AIP Conf. Proc. 335 (AIP, New York, 1995), pp. 501-504.
- [42] Plasma Lens Experiments at the Final Focus Test Beam, W. Barletta, et al., Advanced Accelerator Concepts, P. Schoessow, ed., AIP Conf. Proc. 335 (AIP, New York, 1995), pp. 606-611.
- [43] Plasma Density Distribution of the FFTB Plasma Lens Calculated by Direct Simulation Monte-Carlo Method, T. Kawamura, et al., Advanced Accelerator Concepts, P. Schoessow, ed., AIP Conf. Proc. 335 (AIP, New York, 1995), pp. 513-520.
- [44] High-intensity single bunch instability behavior in the new SLC damping ring vacuum chamber, K. Bane, et al., Proceedings of the 1995 IEEE Particle Accelerator Conference (IEEE, New York, 1996) pp. 3019-3021.
- [45] Progress on plasma lens experiments at the Final Focus Test Facility, P. Kwok, et al., Proceedings of the 1995 IEEE Particle Accelerator Conference (IEEE, New York, 1996) pp. 2135-2137.
- [46] Plasma wakefield acceleration experiments in overdense regime driven by narrow bunches, T. Kozawa, et al., Proceedings of the 1995 IEEE Particle Accelerator Conference (IEEE, New York, 1996) pp. 779-781.
- [47] Microwave analysis of the damped detuned accelerator structure, M. Seidel, et al., Proceedings of the XVIII International Linac Conference (CERN, Geneva, 1997) pp. 653-655.

- [48]TDA3D: Updates and improvements to the widely used three-dimensional free-electron laser simulation, B. Faatz, et al., Proceedings of the XVIII Free-Electron Laser Conference, Nucl. Instrum. Methods A393 (1997) pp. 277-279
- [49]Fabrication of millimeter-wavelength accelerating structures, P.J. Chou, et al., Advanced Accelerator Concepts, AIP Conf. Proc. 398 (AIP, New York, 1997) pp. 501-517.
- [50]Cold-test results of a standing wave muffin-tin structure at X-Band, P.J. Chou, et al., Advanced Accelerator Concepts, AIP Conf. Proc. 398 (AIP, New York, 1997) pp. 473-484.
- [51]Resistive hose instability for arbitrary skin-depth, D.H. Whittum, J. of Phys. D: Appl. Phys. 30 (1997) pp. 1007-1010.
- [52]Transverse two-stream instability of a beam with a Bennett profile, D.H. Whittum, Phys. Plasma 4 (1997) 1154.
- [53]New bunch-length monitor for the SLC final focus, F. Zimmermann, et al., Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 2189-2191.
- [54]Observation of dark current signals in S-Band structures at the SLC linac, R. Assmann, et al., Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 500-502.
- [55]RF breakdown studies in X-Band klystron cavities, X. Xu, et al., Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 3045-3047.
- [56]High-gradient cavity beat-wave accelerator at W-Band, D.H. Whittum, H. Henke, P.J. Chou, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 542-544.
- [57]Transverse kick in misaligned travelling-wave structures driven at the fundamental mode, D.H. Whittum and H. Henke, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 351-353.
- [58]Neutral beam collisions at 5 TeV, D.H. Whittum and R.H. Siemann, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 602-604.
- [59]Detection of beam-induced dipole-mode signals in the SLC S-Band structures, M. Seidel, C. Adolphsen, R. Assmann, and D.H. Whittum, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 2119-2121.
- [60]A proposal for a 1 GeV plasma-wakefield acceleration experiment at SLAC, T. Katsouleas, et al., Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 687-689.
- [61]Lattice commissioning strategy for the B-Factory, M. Lee, Y. Cai, J. Corbett, H. Shoaee, D. Whittum, G. White, Y. Yan and Y. Zambre, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 2586-2588.
- [62]W-Band free electron laser for high-gradient structure research, S. M. Lidia, D.H. Whittum, and J.T. Donohue, Proceedings of the 1997 Particle Accelerator Conference (IEEE, New York, 1998) pp. 900-902.
- [63]Advanced accelerator technologies, a Snowmass '96 subgroup summary, S. Chattopadhyay, D. Whittum, and J. Wurtele, New Directions for High Energy Physics, Proceedings of the 1996 DPF/DPB Summer Study on High Energy Physics, Snowmass '96 (SLAC, Stanford, 1997) pp. 356-369.

- [64] Electron hose instability in an annular plasma sheath, D.H. Whittum, J. Phys. D: Appl. Phys. 30 (1997) pp. 2958-2963.
- [65] Beam break-up with tune chirp for an arbitrary wakefield, D.H. Whittum, J. Phys. A: Math. Gen. 30 (1997) pp. 8751-8760.
- [66] Final focus system and collision schemes for a 5 TeV collider, F. Zimmermann and D. H. Whittum, Proceedings of the Electron-Electron Linear Collider Workshop, Int. J. Mod. Phys. A13 (1998) pp. 2525-2549.
- [67] Absolute beam position measurement in an accelerator structure, M. Seidel, C. Adolphsen, K.L.F. Bane, R. M. Jones, N. M. Kroll, R. H. Miller and D. H. Whittum, Nucl. Instrum. Methods A404 (1998) pp. 231-236.
- [68] Accelerator physics highlights in the 1997/98 SLC run, F. Zimmermann, et al. , Proceedings of the 1st Asian Particle Accelerator Conference (KEK, Tsukuba, 1999) pp. 474-476.
- [69] A beam-timing monitor for the SLC final focus, F. Zimmermann, et al., Proceedings of the 1st Asian Particle Accelerator Conference (KEK, Tsukuba, 1999) pp. 477-479.
- [70] First bunch length studies in the SLC south final focus, F. Zimmermann, et al., Proceedings of the 6th European Particle Accelerator Conference (IOP, Bristol, 1999) pp. 487-489.
- [71] New concepts for a compact 5-TeV collider, F. Zimmermann, D.H. Whittum, and M.E. Hill Proceedings of the 6th European Particle Accelerator Conference (IOP, Bristol, 1999) pp. 865-867.
- [72] Advanced concepts for high-gradient acceleration (invited paper), D.H. Whittum, Proceedings of the 19th International Linear Accelerator Conference (ANL, Argonne, 1999), ANL-98/28, pp. 335-338.
- [73] A proposal for a 1-GeV plasma-wakefield acceleration experiment at SLAC, R. Assmann, et al., Nucl. Instrum. Methods A410 (1998) pp. 396-406.
- [74] Multimode analysis of the plasma channel accelerator, C. Schroeder, D.H. Whittum, and J. Wurtele, Phys. Rev. Lett. 82 (1999 ) pp. 1177-1180.
- [75] Analysis of an asymmetric resonant cavity as a beam monitor, D. H. Whittum and Y. Kolomensky, Rev. Sci. Instrum. 70 (1999) pp. 2300-2313.
- [76] Ultimate gradient in solid-state accelerators (invited paper), David Whittum, in Advanced Accelerator Concepts, W. Lawson, C. Bellamy, and D.F. Brosius, eds., AIP Conf. Proc. 472 (AIP, New York, 1999) pp. 72-85.
- [77] Wakefields in a mm-wave linac, F. Zimmermann, D.H. Whittum, C.K. Ng and M.E. Hill, in Advanced Accelerator Concepts, W. Lawson, C. Bellamy, and D.F. Brosius, eds., AIP Conf. Proc. 472 (AIP, New York, 1999) pp. 270-279.
- [78] Multimode analysis of the hollow plasma channel accelerator, C. Schroeder, J.S. Wurtele, and D.H. Whittum, in Advanced Accelerator Concepts, W. Lawson, C. Bellamy, and D.F. Brosius, eds., AIP Conf. Proc. 472 (AIP, New York, 1999) pp. 453-460.
- [79] Bunch-length and beam-timing monitors in the SLC final focus, F. Zimmermann, et al., in Advanced Accelerator Concepts, W. Lawson, C. Bellamy, and D.F. Brosius, eds., AIP Conf. Proc. 472 (AIP, New York, 1999) pp. 775-784.
- [80] Progress toward E-157: a 1 GeV plasma wakefield accelerator, R. Assmann, et al., Proceedings of the 1999 Particle Accelerator Conference (IEEE, New York, 1999) 330-332.

- [81] Beam profile measurement at 30 GeV using optical transition radiation, P. Catravas, W.P. Leemans, E. Esarey, M. Zolotarev, D. Whittum, R. Iverson, M. Hogan, and D. Walz, Proceedings of the 1999 Particle Accelerator Conference (IEEE, New York, 1999) 2111-2113.
- [82] Planar accelerator structures for millimeter wavelengths, N.M. Kroll, D. C. Vier, M.E. Hill, X.E. Lin, R.H. Siemann, D.H. Whittum, and D.T. Palmer, Proceedings of the 1999 Particle Accelerator Conference (IEEE, New York, 1999) 3612-3614.
- [83] Transverse dynamics of a relativistic electron beam in an underdense plasma channel, A.A. Geraci and D.H. Whittum, Phys. Plasma 7 (2000) 3431-3440.
- [84] Image current heating on metal surface due to charged bunches, X.E. Lin and D.H. Whittum, Phys. Rev. ST Accel. Beams 3 (2000) 1001-1007.
- [85] High-power vacuum window in WR10, M.E. Hill, R.S. Callin and D.H. Whittum, IEEE Trans. MTT 49 (2001) pp. 994-995.
- [86] Beam-cavity interaction circuit at W-Band, M.E. Hill, W.R. Fowkes, X.E. Lin and D.H. Whittum, IEEE Trans. MTT 49 (2001) pp. 998-1000.
- [87] Switched matrix accelerator, D.H. Whittum and S.G. Tantawi, Rev. Sci. Instrum. 72 (2001) pp. 73-91.
- [88] High-power squeeze-type phase-shifter at W-Band, M.E. Hill, R.S. Callin, M. Seidel, and D.H. Whittum, IEEE Trans. MTT 50 (2002) pp. 1437-1441.
- [89] A resonant cavity for single-shot emittance measurement, J.S. Kim, C.D. Nantista, D.H. Whittum, R.H. Miller, S.G. Tantawi, A.W. Weidemann, Proceedings of the 2001 Particle Accelerator Conference (IEEE, Chicago, 2001), pp. 1345-1347.
- [90] High-gradient millimeter-wave accelerator on a planar dielectric substrate, M.E. Hill, Phys. Rev. Lett. 87 (2001) pp. 4801-4804
- [91] Measurement of radiation near an atomic spectral line from the interaction of a 30 GeV electron beam and a long plasma, P. Catravas, et al., Phys. Rev. E. 64 (2001) pp. 6502-6506.
- [92] Observation of Parity Nonconservation in Moller Scattering, P.L. Anthony, *et al.*, Phys. Rev. Lett 92 (2004) pp.1602-1605.

### Technical Reports

- [1] 1-10 Second HANE MHD EMP, M.L. Sloan, B.N. Moore, D.H. Whittum, July 1985, Austin Research Associates Interim Technical Report # 548 for the Defense Nuclear Agency.
- [2] Transverse resistive wall instability in a high-power, short-wavelength free-electron laser, V. Kelvin Neil and David H. Whittum, May 1988, Lawrence Livermore National Laboratory, UCRL-96712.
- [3] Theory of the Ion-Channel Laser, David H. Whittum, LBL-29720.
- [4] Proposal for plasma lens experiments at the Final Focus Test Beam, W. Barletta, et al., SLAC-Proposal-E-150, 1993.
- [5] Summary of the 200-GeV x 200-GeV  $\mu+\mu-$  Collider Working Group, D. Neuffer, et al., in Physics Potential and Development of  $\mu+\mu-$  Colliders, D.B. Cline, ed., AIP Conf. Proc. 352 (AIP, New York, 1996) pp. 204-207.
- [6] Physics and technology of the Next Linear Collider: A Report Submitted to Snowmass '96, NLC ZDR Design Group and NLC Physics Working Group (S. Kuhlman et al.). SLAC-R-0485, Jun 1996.

[7]1-GeV beam acceleration in a one meter long plasma cell, S. Chattopadhyay, et al., SLAC-Proposal-E-157, 1997.

[8]A precision measurement of the weak mixing angle in Møller scattering, R. Carr, et al., K.S. Kumar, coordinator, SLAC-Proposal-E-158, 1997.

[9]Millimeter-wave drivers for future linear colliders, David H. Whittum, SLAC-PUB-7809, 1998.

[10]Active millimeter-wave accelerator with parallel beams, D. H. Whittum and S. G. Tantawi, SLAC-PUB-7845.

### **Patents**

U.S. Patent No. 6,864,633, "X-ray source employing a compact electron beam accelerator", March 8, 2005, M. Trail, D. Whittum, G. Meddaugh.