JOHN BRAND SCHNEIDER

Address:

School of Electrical Engineering and Computer Science Washington State University

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Education:

B.S. Summa Cum Laude, Tulane University, Electrical Engineering, 1983

M.S., University of Washington, Electrical Engineering, 1985

Ph.D., University of Washington, Electrical Engineering, 1991

Professional Experience:

Student Engineer, North Anna Nuclear Power Plant, Jun. 1980 – Aug. 1980

Graduate Teaching Assistant, University of Washington, Sep. 1983 – Jun. 1985,

Sep. 1986 – Dec. 1986

Graduate Research Assistant, University of Washington, Sep. 1985 – Jun. 1986

Participant, San Diego Supercomputer Center Summer Institute, Aug. 1986

System Manager (DEC VAX/VMS), University of Washington, May 1986 - Feb. 1989

Predoctoral Research Assoc., University of Washington, Aug. 1987 – May 1989

Project Associate, Washington State University, May 1989 – Aug. 1991

Visiting Assistant Professor, Washington State University, Aug. 1991 – Aug. 1992

Participant, NSF workshop Revitalizing the Engineering, Mathematics, and Science Curricula via Symbolic Algebra, Jul. 1992

Assistant Professor, Washington State University, Aug. 1992 – Aug. 1998

Associate Director, School of Electrical Engineering and Computer Science, Washington State University, May 2001 – Aug. 2002

Associate Professor, Washington State University, Aug. 1998 – present

Participant, ABET Institute for the Development of Excellence in Assessment Leadership (IDEAL), Aug. 2010

Director of Educational Initiatives, Digilent Inc., Aug. 2012 – Oct. 2013.

Associate Dean for Undergraduate Programs and Student Services, Voiland College of Engineering and Architecture, Washington State University, Jan. 2014 – Aug. 2018.

Research Interests:

Acoustics, optics, and electromagnetics

Wave propagation and scattering

Computer solutions to electromagnetic and acoustic problems

Remote sensing

Awards:

IEEE New Orleans Chapter Best Student Paper Award, 1983

Eldec Corporation Graduate Teaching Fellowship, 1983–86

GTE Graduate Fellowship, 1986–87

Physio-Control Graduate Fellowship, 1987-89

Best Paper Award, Pacific Northwest Am. Soc. for Engineering Education Meeting, 1992

Office of Naval Research Young Investigator, 1996–1999

Washington State University School of Electrical Engineering and Computer Science Outstanding Research Faculty Member, 2000–2001

Washington State University School of Electrical Engineering and Computer Science Outstanding Teacher, 2011–2012

Washington State University Voiland College of Engineering and Architecture Reid Miller Teaching Excellence Award, 2013–2014

IEEE Fellow, 2013

Washington State University Voiland College of Engineering and Architecture Reid Miller Teaching Excellence Award, 2022–2023

Professional Memberships:

Eta Kappa Nu

Tau Beta Pi (Life Member)

Institute of Electrical and Electronics Engineers: Antennas and Propagation Society, Electromagnetic Compatibility Society, Geoscience and Remote Sensing Society, Microwave Theory and Techniques Society, Oceanic Engineering Society

Applied Computational Electromagnetics Society

American Society for Engineering Education

Acoustical Society of America

International Union of Radio Science (URSI) Commission B

Professional Service:

Reviewer for NIH Special Study Section on Electromagnetic Devices; PWS-Kent Publishing Co.; NSF Instrumentation and Laboratory Improvement Program (ILI); NSF Small Business Innovation Research Program (SBIR); and other NSF programs; Engineering and Physical Sciences Research Council (Europe); IEEE Transactions on Acoustics, Speech, and Signal Processing; IEEE Transactions on Antennas and Propagation; IEEE Transactions on Electromagnetic Compatibility; IEEE Transactions on Geoscience and Remote Sensing; IEEE Transactions on Microwave Theory and Techniques; Journal of the Optical Society of America; Radio Science; Journal of Electromagnetic Waves and Applications; IEEE Microwave and Guided Wave Letters; Journal of the Acoustical Society of America; Journal of Computational Physics; Acustica United with Acta Acustica; Applied Computational Electromagnetics Society; Physics of Fluids

Session Chair, 55th Annual PNW ASEE Section Conference, Pullman, WA, 1993

Technical Reviewer and Session Chair for the IEEE Antennas and Propagation Society and URSI Radio Science Meeting, Seattle, WA, 1994

Session Chair, Progress in Electromagnetics Research Symposium (PIERS), Seattle, WA, 1995; Session

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- Chair for the IEEE Antennas and Propagation Society and URSI Radio Science Meeting, Salt Lake City, UT 2000
- Former maintainer of fdtd.org which provided, among other services, a listing of FDTD-related publications
- Associate Editor, Journal of the Acoustical Society of America, 2003–2005
- Member of the Technical Program Committee, reviewer, and session chair for the IEEE International Symposium on Antennas and USNC/URSI National Radio Science Meeting, Charleston, SC, 2009
- Member of the Technical Program Committee, reviewer, and session chair for the IEEE International Symposium on Antennas and CNC-USNC/URSI National Radio Science Meeting, Toronto, Canada, 2010
- Co-Chair of the Technical Program Committee, member of the Special Session Committee, reviewer, and session chair for the IEEE International Symposium on Antennas and USNC/URSI National Radio Science Meeting, Spokane, WA, 2011
- Member of the Technical Program Committee, Special Session Committee, and reviewer for the IEEE International Symposium on Antennas and USNC/URSI National Radio Science Meeting, Chicago, IL, 2012
- Member of the Special Session Committee, Judge for the Student Paper Competition, and reviewer for the IEEE International Symposium on Antennas and USNC/URSI National Radio Science Meeting, Orlando, FL, 2013
- Chair of the Washington Council for Engineering and Related Technical Education (WCERTE), Fall 2016–2018

Grants:

- Co-P.I., Boeing Defense and Space Group, "Electromagnetic Scattering from Curved Conducting Surfaces Coated with Isotropic and Anisotropic Dielectrics," 1993, \$75,000.
- Co-P.I., Office of Naval Research, "Monte Carlo Simulations of Acoustic Propagation through Shallow Water," 1994, \$54,706.
- Co-P.I., Office of Naval Research, "Monte Carlo Simulations of Acoustic Propagation through Shallow Water," 1995–97, \$50,406.
- P.I., Office of Naval Research, "Numerical Studies of Acoustic Propagation in Shallow Water," 1996-99, \$300,000.
- Co-P.I., Office of Naval Research, "Visualization and Animation of Acoustic Propagation," 1996, \$3,447.
- P.I., National Science Foundation, "An Open Database of the Finite-Difference Time-Domain Literature," 1999–2000, \$41,737.
- P.I., Office of Naval Research, "Application of the Finite-Difference Time-Domain Method to Problems in Shallow-Water Acoustics," 1999–2001, \$161,339.
- P.I., Office of Naval Research, "Application of Finite-Difference Time-Domain Methods to Problems in Ocean Acoustics," 2001–2004, \$295,861.
- P.I., Office of Naval Research, "Time-Domain Simulations of Acoustic Scattering from Discrete Objects in an Ocean Sediment," 2005, \$62,013.
- P.I., Electric Power Research Institute (EPRI), "FDTD Modeling of RF Burns," 2008, \$46,170.
- P.I., Electric Power Research Institute (EPRI), "Finite-Difference Time-Domain Modeling of Human Exposure to Advanced Metering Infrastructure Equipment," 2010, \$40,882.
- Co-P.I., National Science Foundation, (Louis Stokes Alliance for Minority Participation [LSAMP]), "Pa-

- cific Northwest LSAMP Alliance," 2014, \$523,654.
- Co-P.I., National Science Foundation (STEP), "Collaborative Research: The Washington State Academic RedShirt in Engineering Program," 2014, \$849,949. (Grant started in 2013. I took over in 2014.)
- Co-P.I., National Science Foundation (S-STEM), "Collaborative Research: The Redshirt Engineering Consortium," 2016, \$761,228.
- P.I., Donation from the Raintrain Foundation, "Creation of the Frank Innovation Zone," 2014, \$1,500,000.
- P.I., Donation from Boeing Cybergrants program, "An Open Innovation Zone for Engineering Student Engagement," 2014, \$42,000.
- P.I., Donation from Stubblefield Trust, "Support for the Washington STate Academic RedShirt (STARS) Program," 2015, \$5,000.
- Over the course of my time as associated dean also participated in providing input to various proposals either to government agencies (where I was not a named PI) or to donors (where the Development Team had lead responsibility).
- Co-P.I., National Science Foundation (HRD-ADVANCE), "Values-based Academic Leadership Trajectories for women in STEM (VAuLTS)," 2019–2023, \$1,218,058.
- P.I., WSU Provost's Office, "Redesign of Fall 2021 Large Course," 2021, \$3,262.

Courses Taught:

Innovation in Design (ENGR 120)

Introduction to Algorithmic Problem Solving (CptS 111)

Data Structures (CptS 122)

Computer Programming for Engineers (CptS 203)

Design of Digital Circuits (EE 214)

The C Programming Language (CptS 251)

Introduction to Electric Circuits (EE 304)

Electrical Circuits I (EE 261)

Electrical Circuits II (EE 321)

Numerical Computing (CptS 330)

Electromagnetic Fields and Waves (EE 331)

Distributed Parameter Systems (EE 351)

Numerical Solutions to Electromagnetics Problems (EE 417)

Introduction to Modern Optics (EE 504)

Advanced Electromagnetic Theory (EE 518)

Special Topics in Electromagnetics (EE 528)

Numerical Solutions to EM Problems I (EE 535)

Introduction to the FDTD Method (EE 595)

Graduate Students:

Mark Steeds, M.S., Thesis: A Comparison of Two Conformal Methods for FDTD Modeling, May 1995 (co-chair with Shira Broschat).

Frank Hastings, Ph.D., Thesis: A Study of Rough Surface Scattering in Electromagnetics, Acoustics, and Elastodynamics Applications Using Finite-Difference Time-Domain Simulations, Aug. 1997.

Christopher L. Wagner, M.S., Thesis: Sources and Field Divergence in Electromagnetic Finite-Difference Time-Domain Simulations, May 1998.

- Julius G. Tolan, M.S., Thesis: Finite-Difference Time-Domain Acoustic Simulations Using a Locally Conformal Representation of Neumann Boundaries, May 2001.
- Christopher L. Wagner, Ph.D., Thesis: *Theoretical Basis for Numerically-Exact Three-Dimensional Time-Domain Algorithms*, May 2004.
- Abulikemu Tuerxunjiang, M.S., Thesis: FDTD Measurement of the Reflection Coefficient Associated with Total Internal Reflection from Gainy Media, Dec. 2008.
- Lanchuan Zhou, Ph.D., Thesis: *The Study of RF Burns and AMI Exposure Using the FDTD Method*, May 2012.
- Timothy Minteer, Ph.D., Thesis: *Electromagenetic Modeling Based on Directional Time-Distance Energy Transfer Analogies*, May 2013.
- Zhen Chen, Ph.D., Thesis: Applications of, and Enhancements to, Finite-Difference-Based Solutions to Problems in Electromagnetics, Dec. 2013.

Graduate Student Committees:

Mark Derbyshire, M.S., Electrical Engineering, June 1993.

Samuel Backus, M.S., Electrical Engineering, Dec. 1993.

Frank Hastings, M.S., Electrical Engineering, May 1993.

Agus Daniel, M.S., Electrical Engineering, Aug. 1993.

Trevor Snyder, M.S., Mechanical Engineering, Dec. 1993.

Christopher Lyon, M.S., Electrical Engineering, Sep. 1994.

Ashraf Osman, M.S., Electrical Engineering, Dec. 1994.

Yan Chen, M.S., Electrical Engineering, Aug. 1995.

Aaron Andrews, Ph.D., Electrical Engineering, May 1994.

S. Gökhun Tanyer, Ph.D., Electrical Engineering, Jul. 1994.

Trevor Snyder, Ph.D., Mechanical Engineering, Dec. 1995

Sterling Backus, Ph.D., Engineering Science, May 1996.

Russel Bruhn, Ph.D., Electrical Engineering, Dec. 1998.

Scot Morse, Ph.D., Physics, Aug. 1998.

John St. George, M.S., Electrical Engineering, Dec. 1999.

Brian Hefner, Ph.D., Physics, Jul. 2000.

Ronggang Zhang, M.S., Electrical Engineering, Dec. 2000.

Florian Blonigan, Ph.D., Physics, Aug. 2001.

Bhavana Katyal, M.S., Electrical Engineering, Aug. 2004.

Curtis Ousterhoudt, Ph.D., Physics, May 2007.

Erik Wemlinger, M.S., Physics, May 2007.

Tim Minteer, M.S., Electrical Engineering, May 2008.

Kyungmin Baik, Ph.D., Physics, May 2008.

Aubrey España, Ph.D., Physics, Jul. 2009.

Yanqiu Wang, Ph.D., Electrical Engineering, May 2010.

Tengmeng Tan, Ph.D., Electrical Engineering, University of Calgary, Mar. 2010.

Jon LaFollett, Ph.D., Physics, Jun. 2010.

Erik Wemlinger, Ph.D., Electrical Engineering, May 2012. Rokib Islam, Ph.D., Electrical Engineering, May 2016. Shuzheng Xie, Ph.D., Electrical Engineering, May 2019. Matthias Engels, Ph.D., Electrical Engineering, Dec. 2019. Jon Leman, Ph.D., Electrical Engineering, May 2021.

Refereed Journal Publications:

[NN:G:II; NN=citations primarily as of Feb. 2022 (although some date to Feb. 2021); G=indicates the citation-count source is Google Scholar; II=journal impact factor for 2024 as report by Google.]

- 1. J. B. Schneider and I. C. Peden, "Differential Cross Section of a Dielectric Ellipsoid by the *T*-Matrix Extended Boundary Condition Method," *IEEE Trans. Antennas Propagat.*, vol. 36, no. 9, pp. 1317–1321, 1988. [45:G:5.7]
- 2. J. Schneider, J. Brew, and I. C. Peden, "Electromagnetic Detection of Buried Dielectric Targets," *IEEE Trans. Geosci. Remote Sensing*, vol. 29, no. 4, pp. 555–562, 1991. [26:G:8.125]
- 3. S. L. Broschat, J. B. Schneider, F. D. Hastings, and M. W. Steeds, "Interactive Software for Undergraduate Electromagnetics," *IEEE Trans. Educ.*, vol. 36, no. 1, pp. 123–126, 1993. [21:G:3.57]
- 4. J. Schneider and I. C. Peden, "Detection of Tunnels in Low Loss Media Illuminated by a Transient Pulse," *IEEE Trans. Geosci. Remote Sensing*, vol. 31, no. 2, pp. 503–506, 1993. [12:G:8.125]
- 5. G. L. Hower, R. G. Olsen, J. D. Earls, and J. B. Schneider, "Inaccuracies in Numerical Calculations of Scattering Near Natural Frequencies of Penetrable Objects," *IEEE Trans. Antennas Propagat.*, vol. 41, no. 7, pp. 982–986, 1993. [84:G:5.7]
- 6. J. Schneider and S. Hudson, "The Finite-Difference Time-Domain Method Applied to Anisotropic Material," *IEEE Trans. Antennas Propagat.*, vol. 41, no. 7, pp. 994–999, 1993. [205:G:5.7]
- 7. J. B. Schneider and S. L. Broschat, "The Measured Equation of Invariance Method Applied to Randomly Rough Surfaces," *Applied Computational Electromagnetics Soc. J.*, vol. 10, no. 1, pp. 19–30, 1995. [3:G:1.41]
- 8. C. W. Manry, S. L. Broschat, and J. B. Schneider, "Higher-Order FDTD Methods for Large Problems," *Applied Computational Electromagnetics Soc. J.*, vol. 10, no. 2, pp. 17–29, 1995. [74:G:1.41]
- 9. C. J. Railton, I. J. Craddock, and J. B. Schneider, "Improved Locally Distorted CPFDTD Algorithm with Provable Stability," *Electronics Lett.*, vol. 31, no. 18, pp. 1585–1586, 1995. [42:G:1.316]
- 10. S. Kapoor and J. B. Schneider, "Characterization of Microstrip Discontinuities Using Conformal Mapping and the Finite-Difference Time-Domain Method," *IEEE Trans. Microwave Theory Tech.*, vol. 43, no. 11, pp. 2636–2639, 1995. [10:G:4.3]
- 11. K. L. Shlager and J. B. Schneider, "A Selective Survey of the Finite-Difference Time-Domain Literature," *IEEE Antennas Propag. Mag.*, vol. 37, no. 4, pp. 39–56, 1995. [371:G:3.5]

12. F. D. Hastings, J. B. Schneider, and S. L. Broschat, "A Monte-Carlo FDTD Technique for Rough Surface Scattering," *IEEE Trans. Antennas Propagat.*, vol. 43, no. 11, pp. 1183–1191, 1995. [212:G:5.7]

- 13. M. W. Steeds, S. L. Broschat, and J. B. Schneider, "A Comparison of Two Conformal Methods for FDTD Modeling," *IEEE Trans. Electomagn. Compat.*, vol. 38, no. 2, pp. 181–187, 1996. [17:G:2.1]
- 14. T. J. Snyder, J. B. Schneider, and J. N. Chung, "A Second Look at Electrokinetic Phenomena in Boiling," *J. Appl. Phys.*, vol. p79, no. 9, pp. 6755–6760, 1996. [12:G:2.286]
- 15. F. D. Hastings, J. B. Schneider, and S. L. Broschat, "Application of the Perfectly Matched Layer (PML) Absorbing Boundary Condition to Elastic Wave Propagation," *J. Acoust. Soc. Am.*, vol. 100, no. 5, pp. 3061–3069, 1996. [455:G:2.4]
- 16. C. J. Railton, I. J. Craddock, and J. B. Schneider, "The Analysis of General 2D PEC Structures Using a Modified CPFDTD Algorithm," *IEEE Trans. Microwave Theory Tech.*, vol. 44, no. 10, pp. 1728–1733, 1996. [23:G:4.3]
- 17. J. B. Schneider, P. J. Flynn, and K. L. Shlager, "Animating the Evolution of a Field," *IEEE Antennas Propag. Mag.*, vol. 38, no. 6, pp. 7–17, 1996. [5:G:3.5]
- 18. J. B. Schneider and K. L. Shlager, "FDTD Simulations of TEM Horns and the Implications for Staircased Representations," *IEEE Trans. Antennas Propagat.*, vol. 45, no. 12, pp. 1830–1838, 1997. [50:G:5.7]
- 19. F. D. Hastings, J. B. Schneider, and S. L. Broschat, "A Finite-Difference Time-Domain Solution to Scattering from a Rough Pressure-Release Surface," *J. Acoust. Soc. Am.*, vol. 102, no. 6, pp. 3394–3400, 1997. [45:G:2.4]
- 20. J. B. Schneider, C. L. Wagner, and S. L. Broschat, "Implementation of Transparent Sources Embedded in Acoustic Finite-Difference Time-Domain Grids," *J. Acoust. Soc. Am.*, vol. 103, no. 1, pp. 136–142, 1998. [75:G:2.4]
- 21. T. J. Snyder, J. N. Chung, and J. B. Schneider, "Competing Effects of Dielectrophoresis and Buoyancy on Nucleate Boiling and an Analogy with Variable Gravity Boiling Results," *J. Heat Transf.–Trans. ASME*, vol. 129, pp. 371–379, May 1998. [24:G:2.1]
- 22. O. M. Ramahi and J. B. Schneider, "Comparative Study of the PML and C-COM Mesh-Truncation Techniques," *IEEE Microwave and Guided Wave Lett.*, vol. 8, no. 2, pp. 55–57, 1998. [15:G:3.0, now published as IEEE MWCL]
- 23. J. B. Schneider and O. M. Ramahi, "The Complementary Operators Method Applied to Acoustic Finite-Difference Time-Domain Simulations," *J. Acoust. Soc. Am.*, vol. 104, no. 2, pt. 1, pp. 686–693, 1998. [23:G:2.4]
- 24. J. B. Schneider, C. L. Wagner, and O. M. Ramahi, "Implementation of Transparent Sources in FDTD Simulations," *IEEE Trans. Antennas Propagat.*, vol. 46, no. 8, pp. 1159–1168, 1998. [57:G:5.7]

25. J. B. Schneider, C. L. Wagner, and R. J. Kruhlak, "Simple Conformal Methods for FDTD Modeling of Pressure-Release Surfaces," *J. Acoust. Soc. Am.*, vol. 104, no. 6, pp. 3219–3226, 1998. [39:G:2.4]

- 26. C. L. Wagner and J. B. Schneider, "Divergent Fields, Charge, and Capacitance in FDTD Simulations," *IEEE Trans. Microwave Theory and Techniques*, vol. 46, no. 12, pp. 2131–2136, 1998. [52:G:4.3]
- 27. C. J. Railton and J. B. Schneider, "An Analytical and Numerical Analysis of Several Locally-Conformal FDTD Schemes," *IEEE Trans. Microwave Theory and Techniques*, vol. 47, no. 1, pp. 56–66, 1999. [97:G:4.3]
- 28. J. B. Schneider and C. L. Wagner, "FDTD Dispersion Revisited: Faster-than-Light Propagation," *IEEE Microwave and Guided Wave Lett.*, vol. 9, no. 2, pp. 54–56, 1999. [115:G:3.0, now published as IEEE MWCL]
- 29. T. J. Snyder, J. B. Schneider, and J. N. Chung, "Dielectrophoresis with Application to Boiling Heat Transfer in Microgravity. I. Numerical Analysis," *J. Appl. Phys.*, vol. 89, no. 7, pp. 4076–4083, 2001. [14:G:2.286]
- 30. T. J. Snyder, J. N. Chung, and J. B. Schneider, "Dielectrophoresis with Application to Boiling Heat Transfer in Microgravity. II. Experimental Investigation," *J. Appl. Phys.*, vol. 89, no. 7, pp. 4084–4090, 2001. [15:G:2.286]
- 31. J. B. Schneider and R. J. Kruhlak, "Dispersion of Homogeneous and Inhomogeneous Waves in the Yee Finite-Difference Time-Domain Grid," *IEEE Trans. Microwave Theory and Techniques*, vol. 49, no. 2, pp. 280–287, 2001. [45:G:4.3]
- 32. F. D. Hastings, J. B. Schneider, S. L. Broschat, and E. I. Thorsos, "An FDTD Method for Analysis of Scattering from Rough Fluid-Fluid Interfaces," *IEEE J. Oceanic Eng.*, vol. 26, no. 1, pp. 94–101, 2001. [16:G:4.2]
- 33. M. W. Feise, P. J. Bevelacqua, and J. B. Schneider, "Effects of Surface Waves on the Behavior of Perfect Lenses," *Physical Review B*, vol. 66, no. 3, 035113 (five pages), 2002. **[87:G:4.904]**
- 34. K. L. Shlager and J. B. Schneider, "Comparison of the Dispersion Properties of Several Low-Dispersion Finite-Difference Time-Domain Algorithms," *IEEE Trans. Antennas Propagat.*, vol. 51, no. 3, pp. 642–653, 2003. [133:G:5.7]
- 35. C. L. Wagner and J. B. Schneider, "On the Analysis of Resonators Using Finite-Difference Time-Domain Techniques," *IEEE Trans. Antennas Propagat.*, vol. 51, no. 10, pp. 2885–2890, 2003. [14:G:5.7]
- 36. J. G. Tolan and J. B. Schneider, "Locally Conformal Method for Acoustic Finite-Difference Time-Domain Modeling of Rigid Surfaces," *J. Acoust. Soc. Am.*, vol. 114, no. 5, pp. 2575–2581, 2003. [40:G:2.4]
- 37. K. L. Shlager and J. B. Schneider, "Comparison of the Dispersion Properties of Higher-Order FDTD Schemes and Equivalent-Sized MRTD Schemes," *IEEE Trans. Antennas Propagat.*, vol. 52, no. 4, pp. 1095-1104, 2004. [49:G:5.7]

38. M. W. Feise, J. B. Schneider, and P. J. Bevelacqua, "Finite-Difference and Pseudospectral Time-Domain Methods Applied to Backwards-Wave Metamaterials," *IEEE Trans. Antennas Propagat.*, vol. 52, no. 11, pp. 2955–2962, 2004. [63:G:5.7]

- 39. J. B. Schneider, "Plane Waves in FDTD Simulations and a Nearly Perfect Total-Field/Scattered-Field Boundary," *IEEE Trans. Antennas Propagat.*, vol. 52, no. 12, pp. 3280–3287, 2004. [130:G:5.7]
- 40. C. L. Wagner and J. B. Schneider, "An Acoustic Finite-Difference Time-Domain Algorithm with Isotropic Dispersion," *J. Computational Acoust.*, vol. 13, no. 2, pp. 365–384, 2005. [14:G:1.471]
- 41. J. B. Schneider and K. Abdijalilov, "Analytic Field Propagation TFSF Boundary for FDTD Problems Involving Planar Interfaces: PECs, TE, and TM," *IEEE Trans. Antennas Propagat.*, vol. 54, no. 9, pp. 2531–2542, 2006. [54:G:5.7]
- 42. K. Abdijalilov and J. B. Schneider, "Analytic Field Propagation TFSF Boundary for FDTD Problems Involving Planar Interfaces: Lossy Material and Evanescent Fields," *IEEE Antennas Wirel. Propag. Lett.*, vol. 5, pp. 454–458, 2006. [32:G:4.2]
- 43. D. J. Robinson and J. B. Schneider, "On the Use of the Geometric Mean in FDTD Near-to-Far-Field Transformations," *IEEE Trans. Antennas Propagat.*, vol. 55, no. 11, pp. 3204–3211, 2007. [35:G:5.7]
- 44. K. J. Willis, J. B. Schneider, and S. C. Hagness, "Amplified Total Internal Reflection: Theory, Analysis, and Demonstration of Existence via FDTD," *Optics Express*, vol. 16, no. 3, pp. 1903-1914, 2008. [39:G:3.833]
- 45. R. G. Olsen, J. B. Schneider, and R. A. Tell, "Radio Frequency Burns in the Power System Workplace," *IEEE Trans. Power Delivery*, vol. 26, no. 1, pp. 352–359, 2011. **[6:G:4.4]**
- 46. J. B. Schneider and Z. Chen, "Incorporating the G-TFSF Concept into the Analytic Field Propagation TFSF Method," *IEEE Trans. Antennas Propagat.*, vol. 59, no. 9, pp. 3296–3304 2011. [7:G:5.7]
- 47. L. Zhou and J. B. Schneider, "A Study of RF Dosimetry from Exposure to an AMI Smart Meter," *IEEE Antennas Propag. Mag.*, vol. 54, no. 6, pp. 69–80, 2012. [14:G:3.5]
- 48. Z. Chen, J. B. Schneider, K. J. Willis, and S. C. Hagness, "A Time-Domain Analysis of Enhanced Total Internal Reflection Using the FDTD Method," *IEEE Microwave and Guided Wave Lett.*, vol. 13, pp. 261–264, 2014. [4:G:3.0, now published as IEEE MWCL]
- 49. J. B. Schneider and R. G. Olsen, "Observations About Propagation, Attenuation, and Radiation of EMI from HVDC Converter Stations," *Appl. Sci.* (ISSN 2076-3417), 14, no. 15: 6740, 2024, https://doi.org/10.3390/app14156740.

Books, Book Chapters, or Book Sections:

1. K. L. Shlager and J. B. Schneider, "A Survey of the Finite-Difference Time-Domain Literature," in *Advances in Computational Electromagnetics: The Finite-Difference Time-Domain Method*, A. Taflove editor, Artech House, Boston, MA, chap. 1, pp. 1–62, 1998.

2. C. L. Wagner and J. B. Schneider, §5.4, " \vec{J} and \vec{H} Current Sources in Three Dimensions," in *Computational Electrodynamics: The Finite-Difference Time-Domain Method*, 2 ed., Allen Taflove and Susan Hagness, Artech House, Boston, MA, 2000 (also appears in 3 ed., 2005).

- 3. J. B. Schneider, §5.9, "Advanced Dispersion Compensation in the TF/SF Technique," in *Computational Electrodynamics: The Finite-Difference Time-Domain Method*, 3 ed., Allen Taflove and Susan Hagness, Artech House, Boston, MA, 2005.
- 4. J. B. Schneider, "Understanding the Finite-Difference Time-Domain Method," available via eecs. wsu.edu/~schneidj/ufdtd, 2010. [315:G]
- 5. J. B. Schneider, S. L. Broschat, J. Dahmen, "Algorithmic Problem Solving with Python," available via eecs.wsu.edu/~schneidj/swan, 2013.

Technical Report:

- T. J. Snyder, J. B. Schneider, Y.-C. Su, and J. N. Chung, "High-Gradient Bubble Dielectrophoresis at the Edge of Two Diverging-Plate Electrodes with Application to Thermal Management in Terrestrial Gravity and Microgravity," report no. WSU-MME-95-4, prepared under NASA grant no. NAG3-1387, Sep. 1995.
- 2. R. G. Olsen, J. B. Schneider, and R. A. Tell, "Radiofrequency Burns in the Workplace," EPRI Technical Report, Oct., 2008.
- 3. R. A. Tell, R. G. Olsen, and J. B. Schneider, "Radio Frequency Burn Mechanisms," EPRI Technical Report 1017991, Dec., 2009.

Invited Talks:

- 1. J. B. Schneider, F. D. Hastings, and C. J. Railton, "Application of Recent Advances in FDTD Modeling to the Problem of Acoustic Propagation in Shallow Water," *12th Annual Review of Progress in Applied Computational Electromagnetics*, vol. 2, pp. 1057–1064, Monterey, CA, Mar. 1996.
- 2. J. B. Schneider, P. J. Flynn, S. L. Broschat, and F. D. Hastings, "Understanding Acoustic Propagation in Shallow Water via Animations," *J. Acoust. Soc. Am.*, vol. 99, no. 4, pt. 2, pp. 2552, Indianapolis, IN, May 1996.
- 3. K. L. Shlager and J. B. Schneider, "Using Non-Uniform FDTD Techniques to Model Narrow-Angled TEM Horn Antennas," Progress in Electromagnetics Research Symposium, Hong Kong, Jan. 1997.
- 4. S. L. Broschat, J. B. Schneider, F. D. Hastings, and P. J. Flynn, "Computational and Theoretical Models for Rough Surface and Bottom Scattering," Proceedings of the 1997 International Conference on Shallow-Water Acoustics, Beijing, pp. 89–94, Apr. 1997.
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