

Peter Schröder

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Research Interests

Digital Geometry Processing, Discrete Differential Geometry, hierarchical methods, numerical algorithms for computer graphics applications.

Education

- Princeton University, Princeton, NJ; PhD in Computer Science, 1994
- Princeton University, Princeton, NJ; MA in Computer Science, 1992
- Media Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts; MS (undesigned), 1990
- Technical University of Berlin, Berlin, Germany; Vor-Diplom, Computer Science and Pure Math, 1987

Professional Experience

- Hans Fischer Senior Fellow, Institute for Advanced Study, TU München, 2009 to present
- California Institute of Technology, Computer Sciences Department, Assist. Prof., Fall 1995 to Spring 1998; Assoc. Prof., Summer 1998 to Spring 2001; Applied & Computational Mathematics Department, Assoc. Prof., Spring 2001; Professor of Computer Science and Applied & Computational Mathematics, Spring 2001 to present
- Institute for Mathematics and its Applications, distinguished visitor, Spring quarter 2001
- Bell Labs, Mathematical Sciences Department, visiting member of technical staff, Summer 2000 to Spring 2001
- Interval Research, Palo Alto, CA; Postdoctoral Research Fellow, Summer 1995
- University of South Carolina, Department of Mathematics; Postdoctoral Research Fellow, Fall 1994 to Summer 1995
- German National Center for Computer Science Research (GMD), Sankt Augustin, Germany; Visiting Research Fellow, 1992 to 1994

Honors and Awards

- Humboldt Professur, 2011 (not taken)
- Hans Fischer Senior Fellowship, 2009
- Humboldt Forschungspreis, 2006
- ACM/SIGGRAPH Computer Graphics Achievement Award, 2003
- Discover Magazine Innovator Finalist Award, 2001
- Packard Fellowship, 1998
- Okawa Foundation Grant, 1997
- IBM partnership award, 1997
- Sloan Fellowship, 1996
- NSF CAREER award, 1996

Teaching

- CS177, **Discrete Differential Geometry**, 2005, 2008, 2009, 2011
- CS286c/ACM256, **Discrete Differential Geometry: Theory and Applications**, 2004
- CS38, **Algorithms**, 2004, 2006
- CS176, **Introduction to Computer Graphics Research**, 2005, 2007, 2009, 2012
- ACM106ab, **Introduction to Methods of Computational Mathematics**, 2003/4, 2007/8, 2010/11
- CS174abc, **Computer Graphics Laboratory**, 1996/97, 1997/98
- EE/CNS 144, **3D Photography** (with Profs. Perona and Arvo), 1996, 1997, 1998
- CS284b, **Topics in Geometric Modeling** (with Prof. Arvo), 1995/96
- CS274, **Computer Graphics Seminar**, 1997, 1998, 2002
- CS257c, **Simulation**, 1999
- CS101.3, **Research in Computer Graphics**, 2002 (spring and fall)
- CS138abc, **Algorithms**, 1999/00, 2003 (b section)
- CS175, **Topics in Geometric Modeling**, 2000, 2001, 2002, 2003, 2005, 2006, 2007

Service

- Computation & Mathematical Sciences hiring committee, 2010
- Applied & Computational Mathematics option representative, 2010 – present
- Director, ACM/SIGGRAPH Executive Committee, 2007 – 2010
- Center for Mathematics of Information Steering Committee, 2005 – present
- Information Science and Technology Initiative Building Committee Chair, 2003 – 2009
- Engineering and Applied Science Division Steering Committee, 2002 – 2005
- Computer Science Steering Committee (Dept. co-chair), 2001 – 2009
- Center for Integrated Multiscale Modeling and Simulation Executive Committee, 2001 – 2005
- Computer Science Option Representative, 1997 – 2000
- Computer Science recruiting committee, 1998 – 2000
- Applied Mathematics recruiting committee, 2000
- Computational Science & Engineering committee, 2000 – 2005
- (Co-)creation of new laboratory class rooms in Jorgensen: SGI UGCS lab, NT Graphics and Concurrency lab, Intel Teaching Lab
- Responsive Workbench visualization facility
- Reviewer for numerous conferences, journals, and government funding agencies

Funding

- Wavelet Methods: Connecting Theory and Application, NSF 9624957, 1996-2000, 260,500\$
- Spherical Wavelet Processing, NASA, 1998-1999, 51,116\$
- Multiresolution Algorithms for Rapid Modeling, Simulation, and Visualization, NSF 9721349, 1998-2002, 298,872\$
- Equipment Acquisition for Research in Enabling Technologies for Volumetric Imaging, Responsive Displays, and Telecollaboration, NSF 9871235, 1998-2002, 296,750\$

- Integrated Design, Modeling, and Simulation, NSF/DARPA 9874082, 1998-2002, 1,671,094\$
- Ideal Data Representations, NSF 9872890, 1998-2002, 328,585\$ (subcontract through U. Wisconsin)
- Advanced Strategic Computing Initiative, DOE (W-7405-ENG-48/B341492), 1998-2008, approx. 42M\$ total (PI Dan Meiron, 8 co-PIs)
- Modeling and Processing of Topologically Complex 3D Shapes, NSF 0220905, 2002-2006, 124,500\$
- Compression of Geometry Datasets, NSF 0138458, 2002-2006, 112,500\$
- Constructive Visualization: Understanding Spatial Relationships through Interaction, NSF 0219979, 2002-2005, 412,000\$
- Computational and Mathematical Foundations for the Synthesis of Multiresolution Representations with Variational Integrators and Discrete Geometry, NSF 0528101, 2005-2008, 302,247\$
- JPL Visualization Program, JPL 1321431, 2007-present, 610,107\$
- Subdivision and the Construction of Smooth Bases for Discrete Differential Forms, NSF 0635112, 2007-2011, 280,000\$

Collaborations

- PDP (Mayo, PI; Greengard, Schröder)
- NSF (Grinspun, PI; Marsden, Schröder)
- CARGO (Zorin, PI; Desbrun, Schröder)
- CARGO (Schröder, PI; Desbrun, DeVore)
- MURI (Doyle, PI; Barr, Marsden, Speyer, Arvo, Burdick, Goldsmith, Murray, Ortiz, Schröder)
- mRSED (Schröder, PI; Antonsson, Doyle, Marsden, Ortiz)
- ASC (Dan Meiron, PI; too numerous to list)
- IDR (Multi-University KDI group; Ron, PI; Daubechies, DeVore, Donoho, Kevrikidis, Orchard, Willinger)
- External collaborators: Ulrich Pinkall, TU Berlin; Alexander Bobenko, TU Berlin; Boris Springborn, TU Berlin; Martin Rumpf, University of Bonn; Ulrich Reif, University of Darmstadt; Leif Kobbelt, RWTH Aachen; David Dobkin, Princeton; Ingrid Daubechies, Princeton; Wim Sweldens, Bell Laboratories (now Alcatel-Lucent); Michael Holst, UCSD; David Donoho, Stanford; Hiroshi Ishii, MIT Media Lab; Peter Oswald, IU Bremen; Petr Krysl, UCSD; Adi Levin, Tel Aviv University; Hugues Hoppe, Microsoft Research

Major Invited Lectures

- AMS Western Meeting, Hawaii, 2012
- Computational Manifolds, Rio de Janeiro, 2011
- Symposium on Geometry Processing, Lausanne, 2011
- Geometry Workshop, Obergurgl, 2011
- Institute for Advanced Study, München, 2010
- Visual Computing Workshop, King Abdullah University of Science and Technology, 2010
- Curves and Surfaces, 1996, 1997, 1999, 2002, 2006, 2008, 2010
- Symposium on Mathematics and Science in Digital Media, Singapore, 2007
- Workshop in Industrial Geometry, Strobl, Austria, 2007
- Oberwolfach Workshops, 2002, 2003, 2004, 2005, 2006, 2007, 2011
- Scale Space Methods and Variational Methods in Computer Vision, 2007
- Discrete Differential Geometry, Knoxville 2006, Berlin, 2007, Knoxville, 2010

- International Congress of Industrial and Applied Mathematics, 2007
- International Congress of Mechanics, 2006
- Discrete Differential Geometry (course), Siggraph, 2005, 2006, 2008
- Subdivision Summer School, Pontignano, Italy, 2005
- Vision, Modeling, and Visualization, Munich, 2003
- Digital Geometry Processing (course), Siggraph, 2003
- Symposium on Computational Geometry, 2002
- 15th Toyota Conference, Shizuoka, 2001
- Game Technology Seminar, San Jose, 2001
- Subdivision for Modeling and Animation (course), 1999, 2000, 2001
- 10th International Conference on Approximation Theory, Saint Louis, 2001
- National Academy of Engineering: Frontiers of Engineering, Irvine, 2000
- SIAM Conference on Geometric Design, 1997, 1999
- Pacific Graphics, Seoul, 1999
- Enumath, Finland, 1999
- AAAS Conference, Anaheim, 1999
- Approximation Theory Conference, Eilat, 1998
- SIAM 45th anniversary meeting, Stanford, 1997
- Wavelets in Computer Graphics (course), Siggraph 1994/95/96
- Selected talks in distinguished lecture series: Cornell University, University of California at Los Angeles, University of Arizona, Columbia University, University of Toronto, University of Utah, University of Illinois at Urbana Champaign, Stanford, University of California San Diego, University of Wisconsin at Madison

Digital Media

- NANO show (collaboration with Steven Schkolne), Los Angeles Museum of Art, 2004
- NEURO show (collaboration with Martin Kersels), Art Center College of Design, 2003
- SIGGRAPH emerging technologies show, 1999
- SIGGRAPH art show, 1991
- SIGGRAPH animation theater, 1991

Publications

Edited Volumes

- BOBENKO, A. I., SCHRÖDER, P., SULLIVAN, J. M., AND ZIEGLER, G. M., Eds. *Discrete Differential Geometry*, vol. 38 of *Oberwolfach Seminars*. Birkhäuser Verlag, 2008.
- GRINSPUN, E., SCHRÖDER, P., AND DESBRUN, M., Eds. *Discrete Differential Geometry*. Course Notes. ACM SIGGRAPH, 2005, 2006. Available at <http://ddg.cs.columbia.edu/>.
- KOBBELT, L., SCHRÖDER, P., AND HOPPE, H., Eds. *Symposium on Geometry Processing*. Eurographics, 2003.
- SCHRÖDER, P., AND SWELDENS, W., Eds. *Digital Geometry Processing*. Course Notes. ACM SIGGRAPH, 2001.

- ZORIN, D., AND SCHRÖDER, P., Eds. *Subdivision for Modeling and Animation*. Course Notes. Game Developers Conference, 2001.
- ZORIN, D., AND SCHRÖDER, P., Eds. *Subdivision for Modeling and Animation*. Course Notes. ACM SIGGRAPH, 2000.
- ZORIN, D., AND SCHRÖDER, P., Eds. *Subdivision for Modeling and Animation*. Course Notes. ACM SIGGRAPH, 1999.
- SCHRÖDER, P., AND ZORIN, D., Eds. *Subdivision for Modeling and Animation*. Course Notes. ACM SIGGRAPH, 1998.
- SCHRÖDER, P., AND SWELDENS, W., Eds. *Wavelets in Computer Graphics*. Course Notes. ACM SIGGRAPH, 1996.
- PUEYO, X., AND SCHRÖDER, P., Eds. *Rendering Techniques '96*. Springer Verlag, Vienna, 1996.

Book Chapters

- SCHRÖDER, P. *What can we Measure?* In *Discrete Differential Geometry*, A. I. Bobenko, P. Schröder, J. M. Sullivan, and G. M. Ziegler, Eds., vol. 38 of *Oberwolfach Seminars*. Birkhäuser Verlag, 2008.
- ELCOTT, S., AND SCHRÖDER, P. *Building Your Own DEC at Home*. In *Discrete Differential Geometry*, E. Grinspun, P. Schröder, and M. Desbrun, Eds., Course Notes. ACM SIGGRAPH, 2005.
- SCHRÖDER, P. *Subdivision, Multiresolution and the Construction of Scalable Algorithms in Computer Graphics*. In *Multivariate Approximation and Applications*, D. Leviatan, Ed. Cambridge University Press, 2001, ch. 5, pp. 213–251.
- SCHRÖDER, P., AND SWELDENS, W. *Digital Geometry Processing*. In *Sixth Annual Symposium on Frontiers of Engineering*, 41–44, 2001.
- SWELDENS, W., AND SCHRÖDER, P. *Building Your Own Wavelets at Home*. In *Wavelets in Computer Graphics*, Course Notes. ACM SIGGRAPH, 1996, pp. 15–87.
- SCHRÖDER, P. *Wavelet Image Compression*. *WIRED 3.05* (May 1995), GeekPage.
- SCHRÖDER, P. *Wavelet Radiosity: Wavelet Methods for Integral Equations*. In *Wavelets and their Applications in Computer Graphics*, Course Notes. ACM SIGGRAPH, 1994, ch. 5, pp. 107–128.
- SCHRÖDER, P. *Wavelet Methods for Radiosity*. In *Advanced Topics in Radiosity*, Course Notes. ACM SIGGRAPH, 1994, ch. 3, pp. 1–21.
- KRÜGER, W., AND SCHRÖDER, P. *Data Parallel Volume Rendering*. In *Scientific Visualization: Advances and Challenges*. Academic Press, 1994.
- SCHRÖDER, P. *Virtuelle Realität — ein langer Marsch*. In *Cyberspace — zum medialen Gesamtkunstwerk*, F. Rötzer and P. Weibel, Eds. Boer Verlag, München, 1993, pp. 203–213.
- SCHRÖDER, P. *Wir bauen eine Maschine, die stolz auf uns sein wird*. In *Cyberspace, Ausflüge in Virtuelle Wirklichkeiten*, M. Waffender, Ed. RoRoRo, Hamburg, 1991, pp. 127–133.
- SCHRÖDER, P., AND ZELTZER, D. *Pathplanning inside Bolio*. In *Synthetic Actors*, Course notes. ACM Siggraph, 1988.

Refereed Publications

- CRANE, K., PINKALL, U., AND SCHRÖDER, P. *Spin Transformations of Discrete Surfaces*. *ACM Transactions on Graphics* 30, 4 (2011).
- CHAO, I., PINKALL, U., SANAN, P., AND SCHRÖDER, P. *A Simple Geometric Model for Elastic Deformations*. *ACM Transactions on Graphics* 29, 4 (2010), 38:1–38:6.
- CRANE, K., DESBRUN, M., AND SCHRÖDER, P. *Trivial Connections on Discrete Surfaces*. *Computer Graphics Forum* 29, 5 (2010), 1525–1533.

- SPRINGBORN, B., SCHRÖDER, P., AND PINKALL, U. [Conformal Equivalence of Triangle Meshes](#). *ACM Transactions on Graphics* 27, 3 (2008), 77:1–77:11.
- FISHER, M., SCHRÖDER, P., DESBRUN, M., AND HOPPE, H. [Design of Tangent Vector Fields](#). *ACM Transactions on Graphics* 26, 3 (2007).
- ANDERSON, A. G., III, W. A. G., AND SCHRÖDER, P. [Quantum Monte Carlo on Graphical Processing Units](#). *Computer Physics Communications* 177, 3 (2007), 298–306.
- FISHER, M., SPRINGBORN, B., SCHRÖDER, P., AND BOBENKO, A. I. [An Algorithm for the Construction of Intrinsic Delaunay Triangulations with Applications to Digital Geometry Processing](#). *Computing* 81, 2–3 (2007), 199–213.
- ELCOTT, S., TONG, Y., KANSO, E., SCHRÖDER, P., AND DESBRUN, M. [Stable, Circulation-Preserving, Simplicial Fluids](#). *ACM Transactions on Graphics* 26, 1 (2007).
- KHAREVYCH, L., WEIWEI, TONG, Y., KANSO, E., MARSDEN, J., SCHRÖDER, P., AND DESBRUN, M. [Geometric, Variational Integrators for Computer Animation](#). In *Symposium on Computer Animation*, 43–52, 2006.
- FRIEDEL, I., SCHRÖDER, P., AND DESBRUN, M. [Unconstrained Spherical Parameterization](#). *Journal of Graphics Tools* 12, 1 (2006), 17–26.
- WANG, K., WEIWEI, TONG, Y., DESBRUN, M., AND SCHRÖDER, P. [Edge Subdivision Schemes and the Construction of Smooth Vector Fields](#). *ACM Transactions on Graphics* 25, 3 (2006), 1041–1048.
- KHAREVYCH, L., SPRINGBORN, B., AND SCHRÖDER, P. [Discrete Conformal Mappings via Circle Patterns](#). *ACM Transactions on Graphics* 25, 2 (2006), 412–438.
- RAHMAN, I. U., DRORI, I., STODDEN, V. C., DONOHO, D. L., AND SCHRÖDER, P. [Multiscale Representations for Manifold-Valued Data](#). *SIAM Multiscale Modeling and Simulation* 4, 4 (2005), 1201–1232.
- BOBENKO, A., AND SCHRÖDER, P. [Discrete Willmore Flow](#). In *Proceedings of Symposium on Geometry Processing*, 101–110, 2005.
- LITKE, N., DROSKE, M., RUMPF, M., AND SCHRÖDER, P. [An Image Processing Approach to Surface Matching](#). In *Proceedings of Symposium on Geometry Processing*, 207–216, 2005.
- SCHKOLNE, S., ISHII, H., AND SCHRÖDER, P. [Immersive Design for DNA Molecules with a Tangible Interface](#). In *IEEE Visualization 2004*, 227–234, 2004.
- FRIEDEL, I., KHODAKOVSKY, A., AND SCHRÖDER, P. [Variational Normal Meshes](#). *ACM Transactions on Graphics* 23, 4 (2004), 1061–1073.
- WOOD, Z., HOPPE, H., DESBRUN, M., AND SCHRÖDER, P. [Removing Excess Topology from Isosurfaces](#). *ACM Transactions on Graphics* 23, 2 (2004), 190–208.
- AKSOYLU, B., KHODAKOVSKY, A., AND SCHRÖDER, P. [Multilevel Solvers for Unstructured Surface Meshes](#). *SIAM J. Sci. Comput.* 26, 4 (2005), 1146–1165.
- HORMANN, K., SPINELLO, S., AND SCHRÖDER, P. [\$C^1\$ -Continuous Terrain Reconstruction from Sparse Contours](#). In *Proceedings of Vision, Modeling, and Visualization*, 289–297, 2003.
- GRINSPUN, E., HIRANI, A., DESBRUN, M., AND SCHRÖDER, P. [Discrete Shells](#). In *Symposium on Computer Animation*, 62–67, 2003.
- BOLZ, J., FARMER, I., GRINSPUN, E., AND SCHRÖDER, P. [Sparse Matrix Solvers on the GPU: Conjugate Gradients and Multigrid](#). *ACM Transactions on Graphics* 22, 3 (2003), 917–924.
- LEE, H., DESBRUN, M., AND SCHRÖDER, P. [Progressive Encoding of Complex Isosurfaces](#). *ACM Transactions on Graphics* 22, 3 (2003), 471–476.
- KHODAKOVSKY, A., LITKE, N., AND SCHRÖDER, P. [Globally Smooth Parameterizations with Low Distortion](#). *ACM Transactions on Graphics* 22, 3 (2003), 350–357.
- FRIEDEL, I., MULLEN, P., AND SCHRÖDER, P. [Data-Dependent Fairing of Subdivision Surfaces](#). In *ACM Solid Modeling Symposium*, 185–195, 2003.

- OSWALD, P., AND SCHRÖDER, P. [Composite Primal/Dual \$\sqrt{3}\$ Subdivision Schemes](#). *Computer Aided Geometric Design* 20, 5 (2003), 135–164.
- SCHRÖDER, P. [Subdivision as a Fundamental Building Block of Digital Geometry Processing Algorithms](#). *Journal of Computational and Applied Mathematics* 149, 1 (2002), 207–219.
- GRINSPUN, E., KRYSL, P., AND SCHRÖDER, P. [CHARMS: A Simple Framework for Adaptive Simulation](#). *ACM Transactions on Graphics* 21, 3 (2002), 281–290.
- DESBRUN, M., MEYER, M., SCHRÖDER, P., AND BARR, A. [Discrete Differential-Geometry Operators for Triangulated 2-Manifolds](#). In *Visualization and Mathematics III*, K. P. Hans-Christian Hege, Ed. Springer Verlag, 2002, pp. 35–57.
- GUSKOV, I., KHODAKOVSKY, A., SCHRÖDER, P., AND SWELDENS, W. [Hybrid Meshes: Multiresolution using Regular and Irregular Refinement](#). In *Proceedings of the Eighteenth Annual Symposium on Computational Geometry*, 264–272, 2002.
- KHODAKOVSKY, A., ALLIEZ, P., DESBRUN, M., AND SCHRÖDER, P. [Near-Optimal Connectivity Encoding of 2-Manifold Polygon Meshes](#). *Graphical Models* 64, 3–4 (2002), 147–168.
- KRYSL, P., GRINSPUN, E., AND SCHRÖDER, P. [Natural Hierarchical Refinement for Finite Element Methods](#). *Int. J. Numer. Meth. Engng.* 56, 8 (2003), 1109–1124.
- BOLZ, J., AND SCHRÖDER, P. [Rapid Evaluation of Catmull-Clark Subdivision Surfaces](#). In *Proceedings of Web3D*, 11–17, 2002.
- LITKE, N., LEVIN, A., AND SCHRÖDER, P. [Fitting Subdivision Surfaces](#). In *Visualization '01*, 319–324, 2001.
- GRINSPUN, E., AND SCHRÖDER, P. [Normal Bounds for Subdivision-Surface Interference Detection](#). In *Visualization '01*, 333–340, 2001.
- PRAUN, E., SWELDENS, W., AND SCHRÖDER, P. [Consistent Mesh Parameterizations](#). In *Computer Graphics (SIGGRAPH '01 Proceedings)*, 179–184, 2001.
- SCHKOLNE, S., PRUETT, M., AND SCHRÖDER, P. [Surface Drawing: Creating Organic 3D Shapes with the Hand and Tangible Tools](#). In *Proceedings of CHI*, 261–268, 2001.
- CIRAK, F., SCOTT, M., ANTONSSON, E., ORTIZ, M., AND SCHRÖDER, P. [Integrated Modeling, Simulation, and Design for Thin-Shell Structures using Subdivision](#). *Computer-Aided Design* 34, 2 (2002), 137–148.
- ZORIN, D., AND SCHRÖDER, P. [A Unified Framework for Primal/Dual Quadrilateral Subdivision Schemes](#). *Computer Aided Geometric Design* 18, 5 (2001), 429–454.
- LITKE, N., LEVIN, A., AND SCHRÖDER, P. [Trimming for Subdivision Surfaces](#). *Computer Aided Geometric Design* 18, 5 (2001), 463–481.
- REIF, U., AND SCHRÖDER, P. [Curvature Integrability of Subdivision Surfaces](#). *Advances in Computational Mathematics* 14, 2 (2001), 157–174.
- WOOD, Z., DESBRUN, M., SCHRÖDER, P., AND BREEN, D. [Semi-Regular Mesh Extraction from Volumes](#). In *Visualization '00*, 275–282, 2000.
- KHODAKOVSKY, A., SCHRÖDER, P., AND SWELDENS, W. [Progressive Geometry Compression](#). In *Computer Graphics (SIGGRAPH '00 Proceedings)*, 271–278, 2000.
- GUSKOV, I., VIDIMČE, K., SWELDENS, W., AND SCHRÖDER, P. [Normal Meshes](#). In *Computer Graphics (SIGGRAPH '00 Proceedings)*, 95–102, 2000.
- DESBRUN, M., MEYER, M., SCHRÖDER, P., AND BARR, A. [Anisotropic Feature-Preserving Denoising of Height Fields and Images](#). In *Graphics Interface Proceedings*, 145–152, 2000.
- CIRAK, F., ORTIZ, M., AND SCHRÖDER, P. [Subdivision Surfaces: A New Paradigm for Thin-Shell Finite-Element Analysis](#). *Int. J. Numer. Meth. Engng.* 47 (2000), 2039–2072.
- GUSKOV, I., SWELDENS, W., AND SCHRÖDER, P. [Multiresolution Signal Processing for Meshes](#). In *Computer Graphics (SIGGRAPH '99 Proceedings)*, 325–334, 1999.

- LEE, A., DOBKIN, D., SWELDENS, W., AND SCHRÖDER, P. [Multiresolution Mesh Morphing](#). In *Computer Graphics (SIGGRAPH '99 Proceedings)*, 95–104, 1999.
- DESBRUN, M., MEYER, M., SCHRÖDER, P., AND BARR, A. [Implicit Fairing of Irregular Meshes using Diffusion and Curvature Flow](#). In *Computer Graphics (SIGGRAPH '99 Proceedings)*, 317–324, 1999.
- DAUBECHIES, I., GUSKOV, I., SCHRÖDER, P., AND SWELDENS, W. [Wavelets on Irregular Point Sets](#). *Phil. Trans. R. Soc. Lond. A*, 357 (1999), 2397–2413.
- KHODAKOVSKY, A., AND SCHRÖDER, P. [Fine Level Feature Editing for Subdivision Surfaces](#). In *ACM Solid Modeling Symposium*, 203–211, 1999.
- DESBRUN, M., SCHRÖDER, P., AND BARR, A. [Interactive Animation of Structured Deformable Objects](#). In *Graphics Interface Proceedings*, 1–8, 1999.
- LEE, A., SWELDENS, W., SCHRÖDER, P., COWSAR, L., AND DOBKIN, D. [MAPS: Multiresolution Adaptive Parameterization of Surfaces](#). In *Computer Graphics (SIGGRAPH '98 Proceedings)*, 95–104, 1998.
- KOBBELT, L., AND SCHRÖDER, P. [A Multiresolution Framework for Variational Subdivision](#). *ACM Transactions on Graphics* 17, 4 (October 1998), 209–237.
- ZORIN, D., HOLST, M., AND SCHRÖDER, P. [Subdivision-Based Surface Representations](#). In *Proceedings of TEAMCAD*, 35–38, May 1997.
- ZORIN, D., SCHRÖDER, P., AND SWELDENS, W. [Interactive Multiresolution Mesh Editing](#). In *Computer Graphics (SIGGRAPH '97 Proceedings)*, 259–268, 1997.
- SCHRÖDER, P. [Wavelets in Computer Graphics](#). *Proceedings of the IEEE* 84, 4 (1996), 615–625.
- ZORIN, D., SCHRÖDER, P., AND SWELDENS, W. [Interpolating Subdivision for Meshes with Arbitrary Topology](#). *Computer Graphics (SIGGRAPH '96 Proceedings)* (1996), 189–192.
- SCHRÖDER, P., AND SWELDENS, W. [Spherical Wavelets: Efficiently Representing Functions on the Sphere](#). In *Computer Graphics (SIGGRAPH '95 Proceedings)*, 161–172, 1995.
- SCHRÖDER, P., AND SWELDENS, W. [Spherical Wavelets: Texture Processing](#). In *Rendering Techniques '95*, P. Hanrahan and W. Purgathofer, Eds. Springer Verlag, Wien, New York, August 1995, pp. 252–263.
- SCHRÖDER, P., AND HANRAHAN, P. [Wavelet Methods for Radiance Computations](#). In *Photorealistic Rendering Techniques*, G. Sakas, P. Shirley, and S. Müller, Eds. Springer Verlag, August 1995.
- SCHRÖDER, P., GORTLER, S. J., COHEN, M. F., AND HANRAHAN, P. [Wavelet Projections For Radiosity](#). *Computer Graphics Forum* 13, 2 (June 1994), 141–152.
- KAUFMAN, A., HÖHNE, K., KRÜGER, W., SCHRÖDER, P., AND ROSENBLUM, L. [Research Issues in Volume Visualization](#). *IEEE Computer Graphics and Applications* 14, 2 (March 1994), 63–67.
- GERSHBEIN, R. S., SCHRÖDER, P., AND HANRAHAN, P. [Textures and Radiosity: Controlling Emission and Reflection with Texture Maps](#). In *Computer Graphics (SIGGRAPH '94 Proceedings)*, 51–58, 1994.
- SCHRÖDER, P. [Numerical Integration for Radiosity in the Presence of Singularities](#). In *Fourth Eurographics Workshop on Rendering*, 1993.
- SCHRÖDER, P., AND HANRAHAN, P. [On The Form Factor Between Two Polygons](#). In *Computer Graphics (SIGGRAPH '93 Proceedings)*, 163–164, August 1993.
- GORTLER, S., SCHRÖDER, P., COHEN, M., AND HANRAHAN, P. [Wavelet Radiosity](#). In *Computer Graphics (SIGGRAPH '93 Proceedings)*, 221–230, 1993.
- SCHRÖDER, P., AND KRÜGER, W. [Data Parallel Volume Rendering Algorithms for Interactive Visualization](#). *The Visual Computer* 10 (1993).
- SCHRÖDER, P., AND STOLL, G. [Data Parallel Volume Rendering As Line Drawing](#). In *1992 Workshop on Volume Visualization*, 25–32, 1992.
- DRUCKER, S. M., AND SCHRÖDER, P. [Fast Radiosity Using a Data Parallel Architecture](#). In *Third Eurographics Workshop on Rendering*, 247–258, May 1992.

- SCHRÖDER, P., AND DRUCKER, S. M. [A Data Parallel Algorithm for Raytracing of Heterogeneous Databases](#). In *Proceedings of Graphics Interface '92*, 167–175, May 1992.
- SCHRÖDER, P., AND SALEM, J. B. Fast Rotation of Volume Data on Parallel Architectures. In *Visualization '91*, 50–57, 1991.
- SCHRÖDER, P., AND ZELTZER, D. The Virtual Erector Set: Dynamic Simulation with Linear Recursive Constraint Propagation. *Computer Graphics* 24, 2 (1990), 23–32.

Other Work Products

- GUSKOV, I., SWELDENS, W., AND SCHRÖDER, P. [Use of Normal Meshes in Three-Dimensional Imaging](#). Patent, 2006.
- KHODAKOVSKY, A., AND SCHRÖDER, P. [Connectivity Encoding and Decoding of Polygon Meshes](#). Patent, 2006.
- GUSKOV, I., KHODAKOVSKY, A., SCHRÖDER, P., AND SWELDENS, W. [Hybrid Meshes](#). Patent, 2006.
- LITKE, N., LEVIN, A., AND SCHRÖDER, P. [Object surface representation and related methods and systems](#). Patent, 2006.
- KHODAKOVSKY, A., SCHRÖDER, P., AND SWELDENS, W. [Compression of 3D Surfaces using Progressive Geometry](#). Patent, 2006.
- CIRAK, F., ORTIZ, M., AND SCHRÖDER, P. [Method and System for Thin-Shell Finite-Element Analysis](#). Patent, 2005.
- LITKE, N., LEVIN, A., AND SCHRÖDER, P. [Method of trimming a representation of an object surface comprising a mesh of tessellated polygons and related system](#). Patent, 2005.
- LITKE, N., LEVIN, A., AND SCHRÖDER, P. [Detail data pertaining to the shape of an object surface and related methods and systems](#). Patent, 2005.
- PRAUN, E., SCHRÖDER, P., AND SWELDENS, W. [Method and apparatus for generation of consistent parameterizations for a set of meshes](#). Patent, 2004.
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