

BIBLIOGRAPHY

- [Aksoylu et al. 05] B. Aksoylu, A. Khodakovsky, and P. Schröder. “Multilevel Solvers for Unstructured Surface Meshes.” *SIAM Journal on Scientific Computing* 26:4 (2005), 1146–65.
- [Aleardi et al. 08] L. C. Aleardi, O. Devillers, and G. Schaeffer. “Succinct Representations of Planar Maps.” *Theoretical Computer Science* 408:2–3 (2008), 174–87.
- [Alliez and Desbrun 01] P. Alliez and M. Desbrun. “Valence-Driven Connectivity Encoding for 3D Meshes.” *Computer Graphics Forum (Proc. Eurographics)* 20:3 (2001), 480–89.
- [Alliez et al. 99] Pierre Alliez, Nathalie Laurent, Henri Sanson, and Francis Schmitt. “Mesh Approximation Using a Volume-Based Metric.” In *Proc. of Pacific Graphics*, pp. 292–301. Washington, DC: IEEE Computer Society, 1999.
- [Alliez et al. 02] P. Alliez, M. Meyer, and M. Desbrun. “Interactive Geometry Remeshing.” *ACM Transactions on Graphics (Proc. SIGGRAPH)* 21:3 (2002), 347–54.
- [Alliez et al. 03a] P. Alliez, D. Cohen-Steiner, O. Devillers, B. Lévy, and M. Desbrun. “Anisotropic Polygonal Remeshing.” *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 485–93.
- [Alliez et al. 03b] P. Alliez, É. Colin de Verdière, O. Devillers, and M. Isenburg. “Isotropic Surface Remeshing.” In *Proc. of Shape Modeling International*, pp. 49–58. Washington, DC: IEEE Computer Society, 2003.
- [Alliez et al. 07] P. Alliez, G. Ucelli, C. Gotsman, and M. Attene. “Recent Advances in Remeshing of Surfaces.” In *Shape Analysis and Structuring*, edited

- by Leila de Floriani and Michela Spagnuolo, pp. 53–82. Heidelberg: Springer-Verlag, 2007.
- [Amenta et al. 99] N. Amenta, M. Bern, and D. Eppstein. “Optimal Point Placement for Mesh Smoothing.” *Journal of Algorithms* 30:2 (1999), 302–22.
- [Angelidis et al. 06] A. Angelidis, M.-P. Cani, G. Wyvill, and S. King. “Swirling-Sweepers: Constant Volume Modeling.” *Graphical Models* 68:4 (2006), 324–32.
- [Attene 10] M. Attene. “A Lightweight Approach to Repairing Digitized Polygon Meshes.” *The Visual Computer* 26 (2010), To appear.
- [Au et al. 07] Oscar Kin-Chung Au, Hongbo Fu, Chiew-Lan Tai, and Daniel Cohen-Or. “Handle-Aware Isolines for Scalable Shape Editing.” *ACM Transactions on Graphics (Proc. SIGGRAPH)* 26:3 (2007), 83.
- [Bærentzen and Aanæs 05] J. Bærentzen and H. Aanæs. “Signed Distance Computation Using the Angle Weighted Pseudo-normal.” *IEEE Transactions on Visualization and Computer Graphics* 11:3 (2005), 243–53.
- [Bajaj and Xu 03] C. L. Bajaj and G. Xu. “Anisotropic Diffusion of Surfaces and Functions on Surfaces.” *ACM Transaction on Graphics* 22:1 (2003), 4–32.
- [Barequet and Kumar 97] G. Barequet and S. Kumar. “Repairing CAD Models.” In *VIS '97: Proceedings of the Conference on Visualization '97*, pp. 363–70. Washington, DC: IEEE Computer Society, 1997.
- [Barequet and Sharir 95] G. Barequet and M. Sharir. “Filling Gaps in the Boundary of a Polyhedron.” *Computer Aided Geometric Design* 12:2 (1995), 207–29.
- [Barrett et al. 94] R. Barrett, M. Berry, T. F. Chan, J. Demmel, J. Donato, J. Dongarra, V. Eijkhout, R. Pozo, C. Romine, and H. Van der Vorst. *Templates for the Solution of Linear Systems: Building Blocks for Iterative Methods*, Second edition. Philadelphia: SIAM, 1994.
- [Baumgart 72] B. G. Baumgart. “Winged-Edge Polyhedron Representation.” Technical Report STAN-CS320, Computer Science Department, Stanford University, 1972.
- [Ben-Chen et al. 08] M. Ben-Chen, C. Gotsman, and G. Bunin. “Conformal Flattening by Curvature Prescription and Metric Scaling.” *Computer Graphics Forum (Proc. Eurographics)* 27 (2008), 449–58.
- [Bendels and Klein 03] G. H. Bendels and R. Klein. “Mesh Forging: Editing of 3D-Meshes Using Implicitly Defined Occluders.” In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 207–17. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Berger 07] Marcel Berger. *A Panoramic View of Riemannian Geometry*. Berlin: Springer, 2007.
- [Bern and Eppstein 00] M. W. Bern and D. Eppstein. “Quadrilateral Meshing by Circle Packing.” *International Journal of Computational Geometry and Applications* 10:4 (2000), 347–60.

- [Bischoff and Kobbelt 03] S. Bischoff and L. Kobbelt. "Sub-Voxel Topology Control for Level-Set Surfaces." *Computer Graphics Forum (Proc. Eurographics)* 22:3 (2003), 273–80.
- [Bischoff and Kobbelt 05] S. Bischoff and L. Kobbelt. "Structure Preserving CAD Model Repair." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 527–36.
- [Bischoff et al. 05] S. Bischoff, D. Pavic, and L. Kobbelt. "Automatic Restoration of Polygon Models." *ACM Transaction on Graphics* 24:4 (2005), 1332–52.
- [Bobenko and Hoffmann 01] A. I. Bobenko and T. Hoffmann. "Conformally Symmetric Circle Packings: A Generalization of Doyle Spirals." *Experimental Mathematics* 10:1 (2001), 141–50.
- [Bobenko and Schröder 05] A. I. Bobenko and P. Schröder. "Discrete Willmore Flow." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 101–110. Aire-la-Ville, Switzerland: Eurographics Association, 2005.
- [Bobenko and Springborn 07] A. I. Bobenko and B. A. Springborn. "A Discrete Laplace-Beltrami Operator for Simplicial Surfaces." *Discrete and Computational Geometry* 38:4 (2007), 740–56.
- [Bobenko et al. 06] A.I. Bobenko, T. Hoffmann, and B.A. Springborn. "Minimal Surfaces from Circle Patterns: Geometry from Combinatorics." *Annals of Mathematics* 164:1 (2006), 1–24.
- [Boier-Martin et al. 04] I. Boier-Martin, H. Rushmeier, and J. Jin. "Parameterization of Triangle Meshes over Quadrilateral Domains." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 193–203. Aire-la-Ville, Switzerland: Eurographics Association, 2004.
- [Boissonnat and Oudot 05] J.-D. Boissonnat and S. Oudot. "Provably Good Sampling and Meshing of Surfaces." *Graphical Models* 67 (2005), 405–51.
- [Boissonnat and Yvinec 98] J.-D. Boissonnat and M. Yvinec. *Algorithmic Geometry*. Cambridge, UK: Cambridge University Press, 1998.
- [Bolz et al. 03] J. Bolz, I. Farmer, E. Grinspun, and P. Schröder. "Sparse Matrix Solvers on the GPU: Conjugate Gradients and Multigrid." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 917–24.
- [Bommes and Kobbelt 07] D. Bommes and L. Kobbelt. "Accurate Computation of Geodesic Distance Fields for Polygonal Curves on Triangle Meshes." In *Proc. of Vision, Modeling, Visualization*, pp. 151–60. Berlin: Akademische Verlagsgesellschaft, 2007.
- [Bommes et al. 09] D. Bommes, H. Zimmer, and L. Kobbelt. "Mixed-Integer Quadrangulation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 28:3 (2009), 77:1–77:10.
- [Bornemann and Deuffhard 96] F. A. Bornemann and P. Deuffhard. "The Cascading Multigrid Method for Elliptic Problems." *Num. Math.* 75:2 (1996), 135–52.

- [Borodin et al. 02] P. Borodin, M. Novotni, and R. Klein. "Progressive Gap Closing for Mesh Repairing." In *Advances in Modelling, Animation and Rendering*, edited by J. Vince and R. Earnshaw, pp. 201–13. London: Springer Verlag, 2002.
- [Borodin et al. 04] P. Borodin, G. Zachmann, and R. Klein. "Consistent Normal Orientation for Polygonal Meshes." In *Proc. of Computer Graphics International*, pp. 18–25. Washington, DC: IEEE Computer Society, 2004.
- [Borouchaki and Frey 05] H. Borouchaki and P. Frey. "Simplification of Surface Mesh Using Hausdorff Envelope." *Computer Methods in Applied Mechanics and Engineering* 194:48-49 (2005), 4864–84.
- [Bossen and Heckbert 96] F. J. Bossen and P. S. Heckbert. "A Pliant Method for Anisotropic Mesh Generation." In *Proc. of International Meshing Roundtable*, pp. 63–74. New York: Springer, 1996.
- [Botsch and Kobbelt 03] M. Botsch and L. Kobbelt. "Multiresolution Surface Representation Based on Displacement Volumes." *Computer Graphics Forum (Proc. Eurographics)* 22:3 (2003), 483–91.
- [Botsch and Kobbelt 04a] M. Botsch and L. Kobbelt. "An Intuitive Framework for Real-Time Freeform Modeling." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 630–34.
- [Botsch and Kobbelt 04b] M. Botsch and L. Kobbelt. "A Remeshing Approach to Multiresolution Modeling." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 189–96. Aire-la-Ville, Switzerland: Eurographics Association, 2004.
- [Botsch and Kobbelt 05] M. Botsch and L. Kobbelt. "Real-Time Shape Editing Using Radial Basis Functions." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 611–21.
- [Botsch and Sorkine 08] M. Botsch and O. Sorkine. "On Linear Variational Surface Deformation Methods." *IEEE Transactions on Visualization and Computer Graphics* 14:1 (2008), 213–30.
- [Botsch et al. 02] M. Botsch, S. Steinberg, S. Bischoff, and L. Kobbelt. Paper presented at the OpenSG Symposium 02, 2002.
- [Botsch et al. 04] M. Botsch, D. Bommes, C. Vogel, and L. Kobbelt. "GPU-Based Tolerance Volumes for Mesh Processing." In *Proc. of Pacific Graphics*. Washington, DC: IEEE Computer Society, 2004.
- [Botsch et al. 05] M. Botsch, D. Bommes, and L. Kobbelt. "Efficient Linear System Solvers for Mesh Processing." *Lecture Notes in Computer Science (Proc. Mathematics of Surfaces)* 3604 (2005), 62–83.
- [Botsch et al. 06a] Mario Botsch, Mark Pauly, Markus Gross, and Leif Kobbelt. "PriMo: Coupled Prisms for Intuitive Surface Modeling." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 11–20. Aire-la-Ville, Switzerland: Eurographics Association, 2006.
- [Botsch et al. 06b] Mario Botsch, Mark Pauly, Christian Rössl, Stephan Bischoff, and Leif Kobbelt, 2006. Course presented at ACM SIGGRAPH 2006.

- [Botsch et al. 06c] Mario Botsch, Robert Sumner, Mark Pauly, and Markus Gross. "Deformation Transfer for Detail-Preserving Surface Editing." In *Proc. of Vision, Modeling, Visualization*, pp. 357–64. Berlin: Akademische Verlagsgesellschaft, 2006.
- [Botsch et al. 07] M. Botsch, M. Pauly, M. Wicke, and M. Gross. "Adaptive Space Deformations Based on Rigid Cells." *Computer Graphics Forum (Proc. Eurographics)* 26:3 (2007), 339–47.
- [Botsch 05] M. Botsch. *High Quality Surface Generation and Efficient Multiresolution Editing Based on Triangle Meshes*. Aachen: Shaker Verlag, 2005.
- [Bremner et al. 01] David Bremner, Ferran Hurtado, Suneeta Ramaswami, and Vera Sacristan. "Small Convex Quadrangulations of Point Sets." In *Algorithms and Computation, 12th International Symposium, ISAAC, 2223*, pp. 623–35. Berlin: Springer, 2001.
- [Briggs et al. 00] W. L. Briggs, V. E. Henson, and S. F. McCormick. *A Multigrid Tutorial*, Second edition. Philadelphia: SIAM, 2000.
- [Buatois et al. 09] Luc Buatois, Guillaume Caumon, and Bruno Lévy. "Concurrent Number Cruncher: A GPU Implementation of a General Sparse Linear Solver." *International Journal of Parallel, Emergent and Distributed Systems* 24:3 (2009), 205–23.
- [Campagna et al. 98] S. Campagna, L. Kobbelt, and H.-P. Seidel. "Directed Edges: A Scalable Representation for Triangle Meshes." *Journal of Graphics, GPU, and Game Tools* 3:4 (1998), 1–12.
- [Campen and Kobbelt 10] Marcel Campen and Leif Kobbelt. "Exact and Robust (Self-)Intersections for Polygonal Meshes." *Computer Graphics Forum (Proc. Eurographics)* 29:2 (2010), 397–406.
- [Carr et al. 01] J. C. Carr, R. K. Beatson, J. B. Cherrie, T. J. Mitchell, W. R. Fright, B. C. McCallum, and T. R. Evans. "Reconstruction and Representation of 3D Objects with Radial Basis Functions." In *Proc. of ACM SIGGRAPH*, pp. 67–76. New York: ACM, 2001.
- [Cazals and Pouget 03] F. Cazals and M. Pouget. "Estimating Differential Quantities Using Polynomial Fitting of Osculating Jets." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 177–87. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Celniker and Gossard 91] G. Celniker and D. Gossard. "Deformable Curve and Surface Finite-Elements for Free-Form Shape Design." In *Proc. of ACM SIGGRAPH*, pp. 257–66. New York: ACM, 1991.
- [CGAL 09] CGAL. "CGAL, Computational Geometry Algorithms Library." <http://www.cgal.org>, 2009.
- [Chen et al. 08] Yanqing Chen, Timothy A. Davis, William W. Hager, and Sivasankaran Rajamanickam. "Algorithm 887: CHOLMOD, Supernodal Sparse Cholesky Factorization and Update/Downdate." *ACM Transactions on Mathematical Software* 35:3 (2008), 1–14.

- [Chen 04] Long Chen. "Mesh Smoothing Schemes Based on Optimal Delaunay Triangulations." In *Proc. of International Meshing Roundtable*, pp. 109–20. New York: Springer, 2004.
- [Chew 93] P. Chew. "Guaranteed-Quality Mesh Generation for Curved Surfaces." In *Proc. of Symposium on Computational Geometry*, pp. 274–80. New York: ACM, 1993.
- [Cignoni et al. 98a] P. Cignoni, C. Montani, and R. Scopigno. "A Comparison of Mesh Simplification Algorithms." In *Computers & Graphics*, pp. 37–54. Amsterdam: Elsevier Science, 1998.
- [Cignoni et al. 98b] P. Cignoni, C. Rocchini, and R. Scopigno. "Metro: Measuring Error on Simplified Surfaces." *Computer Graphics Forum* 17:2 (1998), 167–74.
- [Cignoni et al. 99] P. Cignoni, C. Montani, C. Rocchini, R. Scopigno, and M. Tarini. "Preserving Attribute Values on Simplified Meshes by Resampling Detail Textures." *The Visual Computer* 15:10 (1999), 519–39.
- [Cignoni et al. 04] Paolo Cignoni, Fabio Ganovelli, Enrico Gobbetti, Fabio Marton, Federico Ponchio, and Roberto Scopigno. "Adaptive Tetrapuzzles: Efficient Out-Of-Core Construction and Visualization of Gigantic Multiresolution Polygonal Models." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 796–803.
- [Clarenz et al. 00] U. Clarenz, U. Diewald, and M. Rumpf. "Anisotropic Geometric Diffusion in Surface Processing." In *Proc. of IEEE Visualization*, pp. 397–406. Washington, DC: IEEE Computer Society, 2000.
- [Cohen et al. 96] J. Cohen, A. Varshney, D. Manocha, G. Turk, H. Weber, P. Agarwal, F. P. Brooks, Jr., and W. Wright. "Simplification Envelopes." In *Proc. of ACM SIGGRAPH*, pp. 119–28. New York: ACM, 1996.
- [Cohen et al. 98] J. Cohen, M. Olano, and D. Manocha. "Appearance-Preserving Simplification." In *Proc. of ACM SIGGRAPH*, pp. 115–22. New York: ACM, 1998.
- [Cohen-Steiner and Morvan 03] D. Cohen-Steiner and J.-M. Morvan. "Restricted Delaunay Triangulations and Normal Cycle." In *Proc. of Symposium on Computational Geometry*, pp. 237–46. New York: ACM, 2003.
- [Cohen-Steiner et al. 04] D. Cohen-Steiner, P. Alliez, and M. Desbrun. "Variational Shape Approximation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 905–14.
- [Coquillart 90] S. Coquillart. "Extended Free-Form Deformation: A Sculpturing Tool for 3D Geometric Modeling." In *Proc. of ACM SIGGRAPH*, pp. 187–96. New York: ACM, 1990.
- [Courant 50] R. Courant. *Dirichlet's Principle, Conformal Mapping and Minimal Surfaces*. New York: Interscience, 1950.
- [Coxeter 89] H. Coxeter. *Introduction to Geometry*. New York: John Wiley & Sons, 1989.

- [Curless and Levoy 96] B. Curless and M. Levoy. "A Volumetric Method for Building Complex Models from Range Images." In *Proc. of ACM SIGGRAPH*, pp. 303–12. New York: ACM, 1996.
- [Cuthill and McKee 69] E. Cuthill and J. McKee. "Reducing the Bandwidth of Sparse Symmetric Matrices." In *ACM '69: Proc. of the 24th ACM National Conference*, pp. 157–72. New York: ACM, 1969.
- [Davis et al. 02] J. Davis, S. Marschner, M. Garr, and M. Levoy. "Filling Holes in Complex Surfaces Using Volumetric Diffusion." In *Proc. International Symposium on 3D Data Processing, Visualization, Transmission*, pp. 428–38. Washington, DC: IEEE Computer Society, 2002.
- [Davis 04] T. A. Davis. "Algorithm 832: UMFPACK, An Unsymmetric-Pattern Multifrontal Method." *ACM Transactions on Mathematical Software* 30:2 (2004), 196–99.
- [Davis 06] Timothy A. Davis. *Direct Methods for Sparse Linear Systems*. Philadelphia: SIAM, 2006.
- [de Verdiere 90] Y. Colin de Verdiere. "Sur un nouvel invariant des graphes et un critere de planarite." *Journal of Combinatorial Theory* 50 (1990), 11–21.
- [Degener et al. 03] P. Degener, J. Meseth, and R. Klein. "An Adaptable Surface Parameterization Method." In *Proc. of International Meshing Roundtable*, pp. 201–13. New York: Springer, 2003.
- [Demmel et al. 99] J. W. Demmel, S. C. Eisenstat, J. R. Gilbert, X. S. Li, and J. W. H. Liu. "A Supernodal Approach to Sparse Partial Pivoting." *SIAM Journal on Matrix Analysis and Applications* 20:3 (1999), 720–55.
- [Desbrun et al. 99] M. Desbrun, M. Meyer, P. Schröder, and A. H. Barr. "Implicit Fairing of Irregular Meshes Using Diffusion and Curvature Flow." In *Proc. of ACM SIGGRAPH*, pp. 317–24. New York: ACM, 1999.
- [Desbrun et al. 00] M. Desbrun, M. Meyer, P. Schröder, and A. H. Barr. "Anisotropic Feature-Preserving Denoising of Height Fields and Images." In *Proc. of Graphics Interface*, pp. 145–52. Toronto: Canadian Information Processing Society, 2000.
- [Desbrun et al. 02] M. Desbrun, M. Meyer, and P. Alliez. "Intrinsic Parameterizations of Surface Meshes." *Computer Graphics Forum (Proc. Eurographics)* 21:3 (2002), 209–18.
- [Dey et al. 99] T. K. Dey, H. Edelsbrunner, S. Guha, and D. V. Nekhayev. "Topology Preserving Edge Contraction." *Publ. Inst. Math. (Beograd)* 66 (1999), 23–45.
- [Dey et al. 05] T. K. Dey, G. Li, and T. Ray. "Polygonal Surface Remeshing with Delaunay Refinement." In *Proc. of International Meshing Roundtable*, pp. 343–61. New York: Springer, 2005.
- [Dey 06] T. K. Dey. *Curve and Surface Reconstruction: Algorithms with Mathematical Analysis*. Cambridge, UK: Cambridge University Press, 2006.
- [do Carmo 76] M. P. do Carmo. *Differential Geometry of Curves and Surfaces*. Englewood Cliffs, NJ: Prentice Hall, 1976.

- [Douglas 31] J. Douglas. "Solution of the Problem of Plateau." *Transactions of the American Mathematical Society* 33:1 (1931), 263–321.
- [Du et al. 99] Qiang Du, Vance Faber, and Max Gunzburger. "Centroidal Voronoi Tessellations: Applications and Algorithms." *SIAM Review* 41:4 (1999), 637–76.
- [Duchon 77] J. Duchon. "Spline Minimizing Rotation-Invariant Semi-Norms in Sobolev Spaces." In *Constructive Theory of Functions of Several Variables, number 571 in Lecture Notes in Mathematics*, edited by W. Schempp and K. Zeller, pp. 85–100. Berlin: Springer Verlag, 1977.
- [Eck et al. 95] M. Eck, T. DeRose, T. Duchamp, H. Hoppe, M. Lounsbery, and W. Stuetzle. "Multiresolution Analysis of Arbitrary Meshes." In *Proc. of ACM SIGGRAPH*, pp. 173–82. New York: ACM, 1995.
- [Edelsbrunner and Shah 94] H. Edelsbrunner and N. R. Shah. "Triangulating Topological Spaces." In *Proc. of Symposium on Computational Geometry*, pp. 285–92. New York: ACM, 1994.
- [Edelsbrunner 06] Herbert Edelsbrunner. *Geometry and Topology for Mesh Generation*. Cambridge, UK: Cambridge University Press, 2006.
- [Eigensatz and Pauly 09] Michael Eigensatz and Mark Pauly. "Positional, Metric, and Curvature Control for Constraint-Based Surface Deformation." *Computer Graphics Forum (Proc. Eurographics)* 28:2 (2009), 551–558.
- [Eigensatz et al. 08] M. Eigensatz, R. Sumner, and M. Pauly. "Curvature-Domain Shape Processing." *Computer Graphics Forum (Proc. Eurographics)* 27:2 (2008), 241–250.
- [Eppstein 01] D. Eppstein. *Global Optimization of Mesh Quality*. Tutorial at the 10th International Meshing Roundtable, New York: Springer, 2001.
- [Farin 97] G. Farin. *Curves and Surfaces for Computer Aided Geometric Design*, Fourth edition. San Diego: Academic Press, 1997.
- [Fleishman et al. 03] S. Fleishman, I. Drori, and D. Cohen-Or. "Bilateral Mesh Denoising." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 950–53.
- [Floater and Hormann 05] M. S. Floater and K. Hormann. "Surface Parameterization: A Tutorial and Survey." In *Advances in Multiresolution for Geometric Modelling, Mathematics and Visualization*, edited by N. A. Dodgson, M. S. Floater, and M. A. Sabin, pp. 157–186. Berlin: Springer, 2005.
- [Floater et al. 05] Michael S. Floater, G. Kos, and M. Reimers. "Mean Value Coordinates in 3D." *Computer Aided Geometric Design* 22 (2005), 623–31.
- [Floater 97] M. S. Floater. "Parametrization and Smooth Approximation of Surface Triangulations." *Computer Aided Geometric Design* 14:3 (1997), 231–50.
- [Floater 03] M. S. Floater. "Mean Value Coordinates." *Computer Aided Geometric Design* 20:1 (2003), 19–27.

- [Floriani and Hui 03] L. De Floriani and A. Hui. "A Scalable Data Structure for Three-Dimensional Non-Manifold Objects." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 72–82. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Floriani and Hui 05] L. De Floriani and A. Hui. "Data Structures for Simplicial Complexes: An Analysis and a Comparison." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 119–28. Berlin: Eurographics Association, 2005.
- [Foley et al. 90] James D. Foley, Andries van Dam, Steven K. Feiner, and John F. Hughes. *Computer Graphics: Principles and Practice*, Second edition. Boston, MA: Addison Welsey, 1990.
- [Forsey and Bartels 88] D. Forsey and R. H. Bartels. "Hierarchical B-spline Refinement." In *Proc. of ACM SIGGRAPH*, pp. 205–12. New York: ACM, 1988.
- [Forsey and Bartels 95] D. Forsey and R. H. Bartels. "Surface Fitting with Hierarchical Splines." *ACM Transaction on Graphics* 14:2 (1995), 134–61.
- [Friskén et al. 00] S. Friskén, R. Perry, A. Rockwood, and T. Jones. "Adaptively Sampled Distance Fields: A General Representation of Shape for Computer Graphics." In *Proc. of ACM SIGGRAPH*, pp. 249–54. New York: ACM, 2000.
- [Garland and Heckbert 97] M. Garland and P. Heckbert. "Surface Simplification Using Quadric Error Metrics." In *Proc. of ACM SIGGRAPH*, pp. 209–16. New York: ACM, 1997.
- [Garland and Heckbert 98] M. Garland and P. Heckbert. "Simplifying Surfaces with Color and Texture Using Quadric Error Metrics." In *Proc. of IEEE Visualization*. Washington, DC: IEEE Computer Society, 1998.
- [Gelfand and Fomin 00] I. M. Gelfand and S. V. Fomin. *Calculus of Variations*. New York: Dover Publications, 2000.
- [George and Liu 81] A. George and J. W. H. Liu. *Computer Solution of Large Sparse Positive Definite Matrices*. Englewood Cliffs, NJ: Prentice Hall, 1981.
- [George and Liu 89] A. George and J. W. H. Liu. "The Evolution of the Minimum Degree Ordering Algorithm." *SIAM Review* 31:1 (1989), 1–19.
- [Georgii and Westermann 06] Joachim Georgii and Rüdiger Westermann. "A Multigrid Framework for Real-Time Simulation of Deformable Bodies." *Computers & Graphics* 30:3 (2006), 408–15.
- [Goldfeather and Interrante 04] J. Goldfeather and V. Interrante. "A Novel Cubic-Order Algorithm for Approximating Principal Directions Vectors." *ACM Transaction on Graphics* 23:1 (2004), 45–63.
- [Golub and Loan 89] G. H. Golub and C. F. Van Loan. *Matrix Computations*. Baltimore: Johns Hopkins University Press, 1989.
- [Gortler et al. 06] S. J. Gortler, C. Gotsman, and D. Thurston. "Discrete One-Forms on Meshes and Applications to 3D Mesh Parameterization." *Computer Aided Geometric Design* 23:2 (2006), 83–112.

- [Gotsman et al. 02] C. Gotsman, S. Gumhold, and L. Kobbelt. "Simplification and Compression of 3D Meshes." In *Tutorials on Multiresolution in Geometric Modeling*, edited by M. Floater A. Iske, E. Quak. Berlin: Springer, 2002.
- [Greß and Klein 03] A. Greß and R. Klein. "Efficient Representation and Extraction of 2-Manifold IsoSurfaces Using kd-Trees." In *Proc. of Pacific Graphics*, pp. 364–376. Washington, DC: IEEE Computer Society, 2003.
- [Grinspun et al. 08] E. Grinspun, M. Desbrun, P. Schröder, and M. Wardetzky, 2008. Course presented at SIGGRAPH Asia 2008.
- [Gu and Yau 03] X. Gu and S.-T. Yau. "Global Conformal Surface Parameterization." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 127–37. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Gu and Yau 04] X. Gu and S.-T. Yau. "Optimal Global Conformal Surface Parameterization for Visualization." In *Proc. of IEEE Visualization*, pp. 267–274. Washington, DC: IEEE Computer Society, 2004.
- [Gu et al. 02] X. Gu, S. J. Gortler, and H. Hoppe. "Geometry Images." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 21:3 (2002), 355–361.
- [Guéziec et al. 01] A. Guéziec, G. Taubin, F. Lazarus, and B. Horn. "Cutting and Stitching: Converting Sets of Polygons to Manifold Surfaces." *IEEE Transactions on Visualization and Computer Graphics* 7:2 (2001), 136–51.
- [Guibas and Stolfi 85] L. Guibas and J. Stolfi. "Primitives for the Manipulation of General Subdivisions and Computation of Voronoi Diagrams." *ACM Transaction on Graphics* 4:2 (1985), 74–123.
- [Gumhold et al. 03] Stephan Gumhold, Pavel Borodin, and Reinhard Klein. "Intersection-Free Simplification." *International Journal of Shape Modeling* 9:2 (2003), 155–76.
- [Guskov and Wood 01] I. Guskov and Z. J. Wood. "Topological Noise Removal." In *Proc. of Graphics Interface*, pp. 19–26. Toronto: Canadian Information Processing Society, 2001.
- [Guskov et al. 99] I. Guskov, W. Sweldens, and P. Schröder. "Multiresolution Signal Processing for Meshes." In *Proc. of ACM SIGGRAPH*, pp. 325–34. New York: ACM, 1999.
- [Guskov et al. 00] I. Guskov, K. Vidimce, W. Sweldens, and P. Schröder. "Normal Meshes." In *Proc. of ACM SIGGRAPH*, pp. 95–102. New York: ACM, 2000.
- [Hackbusch 86] W. Hackbusch. *Multi-Grid Methods and Applications*. Berlin: Springer Verlag, 1986.
- [Haralick et al. 87] R. M. Haralick, S. R. Sternberg, and X. Zhuang. "Image Analysis Using Mathematical Morphology." *IEEE Transactions on Pattern Analysis and Machine Intelligence* 9:4 (1987), 532–50.
- [Hétroy et al. 08] F. Hétroy, S. Rey, C. Andújar, P. Brunet, and À. Vinacua. "Mesh Repair with Topology Control." Technical Report 6535, INRIA, 2008.

- [Hildebrandt and Polthier 04] K. Hildebrandt and K. Polthier. "Anisotropic Filtering of Non-Linear Surface Features." *Computer Graphics Forum (Proc. Eurographics)* 23:3 (2004), 391–400.
- [Hildebrandt et al. 06] K. Hildebrandt, K. Polthier, and M. Wardetzky. "On the Convergence of Metric and Geometric Properties of Polyhedral Surfaces." In *Geometriae Dedicata*, pp. 89–112. Aire-la-Ville, Switzerland: Eurographics Association, 2006.
- [Ho et al. 05] C.-C. Ho, F.-C. Wu, B.-Y. Chen, Y.-Y. Chuang, and M. Ouhyoung. "Cubical Marching Squares: Adaptive Feature Preserving Surface Extraction from Volume Data." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 537–545.
- [Hoppe et al. 92] H. Hoppe, T. DeRose, T. Duchamp, J. McDonald, and W. Stuetzle. "Surface Reconstruction from Unorganized Points." In *Proc. of ACM SIGGRAPH*, pp. 71–78. New York: ACM, 1992.
- [Hoppe et al. 93] H. Hoppe, T. DeRose, T. Duchamp, J. McDonald, and W. Stuetzle. "Mesh Optimization." In *Proc. of ACM SIGGRAPH*, pp. 19–26. New York: ACM, 1993.
- [Hoppe 96] H. Hoppe. "Progressive Meshes." In *Proc. of ACM SIGGRAPH*, pp. 99–108. New York: ACM, 1996.
- [Hormann and Greiner 00] K. Hormann and G. Greiner. "MIPS: An Efficient Global Parametrization Method." In *Curve and Surface Design: Saint-Malo 1999*, edited by P.-J. Laurent, P. Sablonniere, and L. Schumaker, pp. 153–62. Nashville, TN: Vanderbilt University Press, 2000.
- [Hormann et al. 07] Kai Hormann, Bruno Lévy, and Alla Sheffer, 2007. Course presented at ACM SIGGRAPH 2007.
- [Hsu et al. 92] W. M. Hsu, J. F. Hughes, and H. Kaufman. "Direct Manipulation of Free-Form Deformations." In *Proc. of ACM SIGGRAPH*, pp. 177–84. New York: ACM, 1992.
- [Hu et al.] L. Hu, P. Sander, and H. Hoppe. In *Proc. of the Symposium on Interactive 3D Graphics and Games*. New York: ACM.
- [Huang et al. 06] Jin Huang, Xiaohan Shi, Xinguo Liu, Kun Zhou, Li-Yi Wei, Shanghua Teng, Hujun Bao, Baining Guo, and Heung-Yeung Shum. "Subspace Gradient Domain Mesh Deformation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 25:3 (2006), 1126–34.
- [Isenburg and Lindstrom 05] M. Isenburg and P. Lindstrom. "Streaming Meshes." In *Proc. of IEEE Visualization*, pp. 231–38. Washington, DC: IEEE Computer Society, 2005.
- [Isenburg et al. 03] M. Isenburg, P. Lindstrom, S. Gumhold, and J. Snoeyink. "Large Mesh Simplification Using Processing Sequences." In *Proc. of IEEE Visualization*, pp. 465–72. Washington, DC: IEEE Computer Society, 2003.
- [Jin et al. 05] Shuangshuang Jin, Robert R. Lewis, and David West. "A Comparison of Algorithms for Vertex-Normal Computation." *The Visual Computer* 21:1–2 (2005), 71–82.

- [Jones et al. 03] T. R. Jones, F. Durand, and M. Desbrun. "Non-Iterative, Feature-Preserving Mesh Smoothing." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 943–49.
- [Ju et al. 02] T. Ju, F. Lasasso, S. Schaefer, and J. Warren. "Dual Contouring of Hermite Data." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 21:3 (2002), 339–46.
- [Ju et al. 05] Tao Ju, Scott Schaefer, and Joe Warren. "Mean Value Coordinates for Closed Triangular Meshes." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 24:3 (2005), 561–66.
- [Ju et al. 07] Tao Ju, P. Liepa, and Joe Warren. "A General Geometric Construction of Coordinates in a Convex Simplicial Polytope." *Computer Aided Geometric Design* 24:3 (2007), 161–78.
- [Ju 04] T. Ju. "Robust Repair of Polygonal Models." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 888–95.
- [Ju 09] Tao Ju. "Fixing Geometric Errors on Polygonal Models: A Survey." *Journal of Computer Science and Technology* 1:24 (2009), 19–29.
- [Julius et al. 05] D. Julius, V. Kraevoy, and A. Sheffer. "D-Charts: Quasi-Developable Mesh Segmentation." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 581–90.
- [Kälberer et al. 05] F. Kälberer, K. Polthier, U. Reitebuch, and M. Wardetzky. "FreeLence: Coding with Free Valences." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 469–78.
- [Kallmann and Thalmann 01] Marcelo Kallmann and Daniel Thalmann. "Star-Vertices: A Compact Representation for Planar Meshes with Adjacency Information." *Journal of Graphics, GPU, and Game Tools* 6:1 (2001), 7–18.
- [Karypis and Kumar 98] G. Karypis and V. Kumar. "A Fast and High Quality Multilevel Scheme for Partitioning Irregular Graphs." *SIAM Journal on Scientific Computing* 20:1 (1998), 359–92.
- [Kaufman 87] A. Kaufman. "Efficient Algorithms for 3D Scan-Conversion of Parametric Curves, Surfaces, and Volumes." In *Proc. of ACM SIGGRAPH*, pp. 171–79. New York: ACM, 1987.
- [Kazhdan and Hoppe 08] Michael Kazhdan and Hugues Hoppe. "Streaming Multigrid for Gradient-Domain Operations on Large Images." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 27:3 (2008), 21:1–21:10.
- [Kettner 99] L. Kettner. "Using Generic Programming for Designing a Data Structure for Polyhedral Surfaces." *Computational Geometry: Theory and Applications* 13:1 (1999), 65–90.
- [Kimmel and Sethian 98] R. Kimmel and J. A. Sethian. "Computing Geodesic Paths on Manifolds." *Proc. Natl. Acad. Sci. USA* 95 (1998), 8431–35.
- [Klein et al. 96] R. Klein, G. Liebich, and W. Straßer. "Mesh Reduction with Error Control." In *Proc. of IEEE Visualization*, pp. 311–18. Los Alamitos, CA: IEEE Computer Society Press, 1996.

- [Klincsek 80] G. Klincsek. "Minimal Triangulation of Polygonal Domains." *Annals of Discrete Mathematics* 9 (1980), 121–23.
- [Kobbelt and Botsch 04] L. Kobbelt and M. Botsch. "A Survey of Point-Based Techniques in Computer Graphics." *Computers & Graphics* 28:6 (2004), 801–14.
- [Kobbelt et al. 98a] L. Kobbelt, S. Campagna, and H.-P. Seidel. "A General Framework for Mesh Decimation." In *Proc. of Graphics Interface*, pp. 43–50. Toronto: Canadian Information Processing Society, 1998.
- [Kobbelt et al. 98b] L. Kobbelt, S. Campagna, J. Vorsatz, and H.-P. Seidel. "Interactive Multi-Resolution Modeling on Arbitrary Meshes." In *Proc. of ACM SIGGRAPH*, pp. 105–14. New York: ACM, 1998.
- [Kobbelt et al. 99a] L. Kobbelt, J. Vorsatz, U. Labsik, and H.-P. Seidel. "A Shrink Wrapping Approach to Remeshing Polygonal Surfaces." *Computer Graphics Forum (Proc. Eurographics)* 18:3 (1999), 119–30.
- [Kobbelt et al. 99b] L. Kobbelt, J. Vorsatz, and H.-P. Seidel. "Multiresolution Hierarchies on Unstructured Triangle Meshes." *Computational Geometry: Theory and Applications* 14:1–3 (1999), 5–24.
- [Kobbelt et al. 00] L. Kobbelt, T. Bareuther, and H.-P. Seidel. "Multiresolution Shape Deformations for Meshes with Dynamic Vertex Connectivity." *Computer Graphics Forum (Proc. Eurographics)* 19:3 (2000), 249–60.
- [Kobbelt et al. 01] L. Kobbelt, M. Botsch, U. Schwanke, and H.-P. Seidel. "Feature Sensitive Surface Extraction from Volume Data." In *Proc. of ACM SIGGRAPH*, pp. 57–66. New York: ACM, 2001.
- [Kobbelt et al. 05] L. Kobbelt, M. Botsch, U. Schwanke, and H.-P. Seidel. "Extended Marching Cubes Implementation." <http://www-i8.informatik.rwth-aachen.de/software/software.html>, 2002–2005.
- [Kobbelt 97] L. Kobbelt. "Discrete Fairing." In *Proc. of 7th IMA Conference on the Mathematics of Surfaces*, pp. 101–31. Berlin: Springer, 1997.
- [Kobbelt 03] L. Kobbelt. "Freeform Shape Representations for Efficient Geometry Processing." Presentation at Eurographics, 2003.
- [Lee et al. 98] A. W. F. Lee, W. Sweldens, P. Schröder, L. Cowsar, and D. Dobkin. "MAPS: Multiresolution Adaptive Parameterization of Surfaces." In *Proc. of ACM SIGGRAPH*, pp. 95–104. New York: ACM, 1998.
- [Lee et al. 00] A. Lee, H. Moreton, and H. Hoppe. "Displaced Subdivision Surfaces." In *Proc. of ACM SIGGRAPH*, pp. 85–94. New York: ACM, 2000.
- [Lévy et al. 02] Bruno Lévy, Sylvain Petitjean, Nicolas Ray, and Jérôme Maillot. "Least Squares Conformal Maps for Automatic Texture Atlas Generation." *ACM Trans. Graph.* 21 (2002), 362–71.
- [Liepa 03] P. Liepa. "Filling Holes in Meshes." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 200–205. Aire-la-Ville, Switzerland: Eurographics Association, 2003.

- [Light 92] W. Light. *Advances in Numerical Analysis: Wavelets, Subdivision Algorithms, and Radial Basis Functions*, 2. Oxford: Clarendon Press, 1992.
- [Lindstrom and Silva 01] P. Lindstrom and C. Silva. "A Memory-Insensitive Technique for Large Model Simplification." In *Proc. of IEEE Visualization*, pp. 121–6. Washington, DC: IEEE Computer Society, 2001.
- [Lindstrom 00] P. Lindstrom. "Out-Of-Core Simplification of Large Polygonal Models." In *Proc. of ACM SIGGRAPH*, pp. 259–62. New York: ACM, 2000.
- [Lipman et al. 04] Y. Lipman, O. Sorkine, D. Cohen-Or, D. Levin, C. Rössl, and H.-P. Seidel. "Differential Coordinates for Interactive Mesh Editing." In *Proc. of Shape Modeling International*, pp. 181–90. Washington, DC: IEEE Computer Society, 2004.
- [Lipman et al. 08] Yaron Lipman, David Levin, and Daniel Cohen-Or. "Green Coordinates." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 27:3 (2008), 1–10.
- [Liu and Sherman 76] J. W. H. Liu and A. H. Sherman. "Comparative Analysis of the Cuthill-McKee and the Reverse Cuthill-McKee Ordering Algorithms for Sparse Matrices." *SIAM Journal on Numerical Analysis* 2:13 (1976), 198–213.
- [Liu 85] J. W. H. Liu. "Modification of the Minimum-Degree Algorithm by Multiple Elimination." *ACM Trans. Math. Softw.* 11:2 (1985), 141–53.
- [Lloyd 82] S. Lloyd. "Least Square Quantization in PCM." *IEEE Trans. Inform. Theory* 28 (1982), 129–37.
- [Lorensen and Cline 87] W. E. Lorensen and H. E. Cline. "Marching Cubes: A High Resolution 3D Surface Construction Algorithm." In *Proc. of ACM SIGGRAPH*, pp. 163–70. New York: ACM, 1987.
- [Losasso et al. 03] F. Losasso, H. Hoppe, S. Schaefer, and J. Warren. "Smooth Geometry Images." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 138–45. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Luebke et al. 03] David Luebke, Martin Reddy, Jonathan D. Cohen, Amitabh Varshney, Benjamin Watson, and Robert Huebner. *Level of Detail for 3D Graphics*. San Francisco: Morgan Kaufmann, 2003.
- [MacCracken and Joy 96] R. MacCracken and K. I. Joy. "Free-Form Deformations with Lattices of Arbitrary Topology." In *Proc. of ACM SIGGRAPH*, pp. 181–88. New York: ACM, 1996.
- [Maillot et al. 93] J. Maillot, H. Yahia, and A. Verroust. "Interactive Texture Mapping." In *Proc. of ACM SIGGRAPH*, pp. 27–34. New York: ACM, 1993.
- [Mantyla 88] M. Mantyla. *An Introduction to Solid Modeling*. New York: Computer Science Press, 1988.

- [Marinov and Kobbelt 04] M. Marinov and L. Kobbelt. "Direct Anisotropic Quad-Dominant Remeshing." In *Proc. of Pacific Graphics*, pp. 207–16. Washington, DC: IEEE Computer Society, 2004.
- [Marinov and Kobbelt 05] M. Marinov and L. Kobbelt. "Automatic Generation of Structure Preserving Multiresolution Models." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 479–86.
- [Marinov and Kobbelt 06] M. Marinov and L. Kobbelt. "A Robust Two-Step Procedure for Quad-Dominant Remeshing." *Computer Graphics Forum (Proc. Eurographics)* 25:3 (2006), 537–46.
- [Marinov et al. 07] M. Marinov, M. Botsch, and L. Kobbelt. "GPU-Based Multiresolution Deformation Using Approximate Normal Field Reconstruction." *Journal of Graphics, GPU, and Game Tools* 12:1 (2007), 27–46.
- [Max 99] Nelson Max. "Weights for Computing Vertex Normals from Facet Normals." *Journal of Graphics, GPU, and Game Tools* 4:2 (1999), 1–6.
- [Meeks 81] W. H. Meeks. "A Survey of the Geometric Results in the Classical Theory of Minimal Surfaces." *Bulletin of the Brazilian Mathematical Society* 12:1 (1981), 29–86.
- [Meshar et al. 06] O. Meshar, D. Irony, and S. Toledo. "An Out-Of-Core Sparse Symmetric Indefinite Factorization Method." *ACM Transactions on Mathematical Software* 32 (2006), 445–71.
- [Meyer et al. 03] M. Meyer, M. Desbrun, P. Schröder, and A. H. Barr. "Discrete Differential-Geometry Operators for Triangulated 2-Manifolds." In *Visualization and Mathematics III*, edited by Hans-Christian Hege and Konrad Polthier, pp. 35–57. Heidelberg: Springer-Verlag, 2003.
- [Montani et al. 94] C. Montani, R. Scateni, and R. Scopigno. "A Modified Look-up Table for Implicit Disambiguation of Marching Cubes." *The Visual Computer* 10:6 (1994), 353–55.
- [Moreton and Séquin 92] H. P. Moreton and C. H. Séquin. "Functional Optimization for Fair Surface Design." In *Proc. of ACM SIGGRAPH*, pp. 167–76. New York: ACM, 1992.
- [Morse et al. 01] B. S. Morse, T. S. Yoo, D. T. Chen, P. Rheingans, and K. R. Subramanian. "Interpolating Implicit Surfaces from Scattered Surface Data Using Compactly Supported Radial Basis Functions." In *Proc. of Shape Modeling International*, pp. 89–98. Washington, DC: IEEE Computer Society, 2001.
- [Murali and Funkhouser 97] T. M. Murali and T. A. Funkhouser. "Consistent Solid and Boundary Representations from Arbitrary Polygonal Data." In *Proc. of the Symposium on Interactive 3D Graphics*, pp. 155–62. New York: ACM, 1997.
- [Nadler 86] Edmond Nadler. "Piecewise-Linear Best L2 Approximation on Triangulations." In *Approximation Theory V*, edited by C. K. Chui, L. L. Schumaker, and J. D. Ward, pp. 499–502. New York: Academic Press, 1986.

- [Nealen et al. 05] A. Nealen, O. Sorkine, M. Alexa, and D. Cohen-Or. "A Sketch-Based Interface for Detail-Preserving Mesh Editing." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 24:3 (2005), 1142–47.
- [Needham 94] Tristan Needham. *Visual Complex Analysis*. Oxford, UK: Oxford Press, 1994. <http://www.usfca.edu/vca/>.
- [Nooruddin and Turk 03] F.S. Nooruddin and G. Turk. "Simplification and Repair of Polygonal Models Using Volumetric Techniques." *IEEE Transactions on Visualization and Computer Graphics* 9:2 (2003), 191–205.
- [Ohtake et al. 03] Y. Ohtake, A. Belyaev, M. Alexa, G. Turk, and H.-P. Seidel. "Multi-Level Partition of Unity Implicits." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 463–70.
- [Ohtake et al. 04] Y. Ohtake, A. Belyaev, and H.-P. Seidel. "3D Scattered Data Approximation with Adaptive Compactly Supported Radial Basis Functions." In *Proc. of Shape Modeling International*, pp. 31–9. Washington, DC: IEEE Computer Society, 2004.
- [Okabe et al. 92] A. Okabe, B. Boots, and K. Sugihara. *Spatial Tessellations: Concepts and Applications of Voronoi Diagrams*. Chichester, UK: Wiley, 1992.
- [O'Rourke 94] J. O'Rourke. *Computational Geometry in C*. Cambridge, UK: Cambridge University Press, 1994.
- [Pauly et al. 00] Mark Pauly, Thomas Kollig, and Alexander Keller. "Metropolis Light Transport for Participating Media." In *Proc. of Eurographics Workshop on Rendering Techniques*, pp. 11–22. Aire-la-Ville, Switzerland: Eurographics Association, 2000.
- [Pauly et al. 03] M. Pauly, R. Keiser, L. Kobbelt, and M. Gross. "Shape Modeling with Point-Sampled Geometry." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 641–50.
- [Pauly et al. 05] M. Pauly, N. Mitra, J. Giesen, M. Gross, and L. J. Guibas. "Example-Based 3D Scan Completion." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 23–32. Aire-la-Ville, Switzerland: Eurographics Association, 2005.
- [Pauly et al. 06] M. Pauly, L. Kobbelt, and M. Gross. "Point-Based Multi-Scale Surface Representation." *ACM Transaction on Graphics* 25:2 (2006), 177–93.
- [Pauly 03] Mark Pauly. *Point Primitives for Interactive Modeling and Processing of 3D Geometry*. PhD Thesis, ETH Zurich, Konstanz, Germany: Hartung Gorre, 2003.
- [Perona and Malik 90] P. Perona and J. Malik. "Scale-Space and Edge Detection Using Anisotropic Diffusion." *IEEE Transactions on Pattern Analysis and Machine Intelligence* 12:7 (1990), 629–39.
- [Peters and Reif 08] J. Peters and U. Reif. *Subdivision Surfaces*, Geometry and Computing edition. Berlin: Springer Verlag, 2008.

- [Petitjean 02] S. Petitjean. "A Survey of Methods for Recovering Quadrics in Triangle Meshes." *ACM Computing Surveys* 34:2 (2002), 211–62.
- [Peyré and Cohen 04] G. Peyré and L. Cohen. "Surface Segmentation Using Geodesic Centroidal Tesselation." In *3DPVT '04: Proceedings of the 3D Data Processing, Visualization, and Transmission*, pp. 995–1002. Washington, DC: IEEE Computer Society, 2004.
- [Piegl and Tiller 97] L. A. Piegl and W. Tiller. *The NURBS Book*, Second edition. Berlin: Springer, 1997.
- [Pinkall and Polthier 93] U. Pinkall and K. Polthier. "Computing Discrete Minimal Surfaces and Their Conjugates." *Experimental Mathematics* 2:1 (1993), 15–36.
- [Plateau 73] J. A. F. Plateau. *Statistique Experimentale et Theorie des Liquides Soumis aux Seules Forces Moleculaires*. Paris: Gauthier-Villars, 1873.
- [Podolak and Rusinkiewicz 05] J. Podolak and S. Rusinkiewicz. "Atomic Volumes for Mesh Completion." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 33–41. Aire-la-Ville, Switzerland: Eurographics Association, 2005.
- [Prautzsch et al. 02] H. Prautzsch, W. Boehm, and M. Paluszny. *Bézier and B-Spline Techniques*. Berlin: Springer Verlag, 2002.
- [Press et al. 92] W. H. Press, B. P. Flannery, S. A. Teukolsky, and W. T. Vetterling. *Numerical Recipes: The Art of Scientific Computing*, Second edition. Cambridge, UK: Cambridge University Press, 1992.
- [Rado 30] T. Rado. "The Problem of Least Area and the Problem of Plateau." In *Mathematische Zeitschrift*, 32, pp. 763–96. Berlin: Springer, 1930.
- [Ray and Lévy 03] Nicolas Ray and Bruno Lévy. "Hierarchical Least Squares Conformal Maps." In *Proc. of Pacific Graphics*, pp. 263–70. Washington, DC: IEEE Computer Society, 2003.
- [Ray et al. 06] Nicolas Ray, Wan Chiu Li, Bruno Lévy, Alla Sheffer, and Pierre Alliez. "Periodic Global Parameterization." *ACM Transaction on Graphics* 25:4 (2006), 1460–85.
- [Renard and Pommier 05] Y. Renard and J. Pommier. "Gmm++: A Generic Template Matrix C++ Library." http://www-gmm.insa-toulouse.fr/getfem/gmm_intro, 2005.
- [Rivara 84] Ceciliar Rivara. "Mesh Refinement Processes Based on the Generalized Bisection of Simplices." *SIAM Journal on Numerical Analysis* 21 (1984), 604–13.
- [Ross 80] K. Ross. *Elementary Analysis: The Theory of Calculus*. Berlin: Springer Verlag, 1980.
- [Rossignac and Borrel 93] J. Rossignac and P. Borrel. "Multi-resolution 3D Approximations for Rendering Complex Scenes." In *Modeling in Computer Graphics*, edited by B. Falcidieno and T. L. Kunii, pp. 455–65. Berlin: Springer Verlag, 1993.

- [Rudin 02] W. Rudin. *Principles of Mathematical Analysis*, Third edition. New York: McGraw-Hill, 2002.
- [Rusinkiewicz 04] S. Rusinkiewicz. "Estimating Curvatures and Their Derivatives on Triangle Meshes." In *3DPVT '04: Proceedings of the 3D Data Processing, Visualization, and Transmission*, pp. 486–93. Washington, DC: IEEE Computer Society, 2004.
- [Samet 94] H. Samet. *The Design and Analysis of Spatial Data Structures*. Reading, MA: Addison Wesley, 1994.
- [Sander et al. 01] P. V. Sander, J. Snyder, S. J. Gortler, and H. Hoppe. "Texture Mapping Progressive Meshes." In *Proc. of ACM SIGGRAPH*, pp. 409–16. New York: ACM, 2001.
- [Sander et al. 02] P. Sander, S. Gortler, J. Snyder, and H. Hoppe. "Signal-Specialized Parametrization." In *Proc. of Eurographics Workshop on Rendering Techniques*. Aire-la-Ville, Switzerland: Eurographics Association, 2002.
- [Sander et al. 03] P. Sander, Z. Wood, S. Gortler, J. Snyder, and H. Hoppe. "Multi-Chart Geometry Images." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 146–55. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Schneider and Kobbelt 00] R. Schneider and L. Kobbelt. "Generating Fair Meshes with G^1 Boundary Conditions." In *Proc. of Geometric Modeling and Processing*, pp. 251–61. Washington, DC: IEEE Computer Society, 2000.
- [Schneider and Kobbelt 01] R. Schneider and L. Kobbelt. "Geometric Fairing of Irregular Meshes for Free-Form Surface Design." *Computer Aided Geometric Design* 18:4 (2001), 359–79.
- [Schroeder et al. 92] W. Schroeder, J. Zarge, and W. Lorensen. "Decimation of Triangle Meshes." In *Proc. of ACM SIGGRAPH*, pp. 65–70. New York: ACM, 1992.
- [Schroeder 97] W. Schroeder. "A Topology Modifying Progressive Decimation Algorithm." In *Proc. of IEEE Visualization*, pp. 205–12. Washington, DC: IEEE Computer Society, 1997.
- [Sederberg and Parry 86] T. W. Sederberg and S. R. Parry. "Free-Form Deformation of Solid Geometric Models." In *Proc. of ACM SIGGRAPH*, pp. 151–59. New York: ACM, 1986.
- [Sederberg et al. 03] T. Sederberg, J. Zheng, A. Bakenov, and A. Nasri. "T-splines and T-NURCCs." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 477–84.
- [Sethian 96] J. Sethian. "A Fast Marching Level Set Method for Monotonically Advancing Fronts." *Proc. of the National Academy of Science* 93 (1996), 1591–95.
- [Shaffer and Garland 01] E. Shaffer and M. Garland. "Efficient Adaptive Simplification of Massive Meshes." In *Proc. of IEEE Visualization*, pp. 127–34. Washington, DC: IEEE Computer Society, 2001.

- [Sharf et al. 04] Andrei Sharf, Marc Alexa, and Daniel Cohen-Or. "Context-Based Surface Completion." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 878–87.
- [Sheffer and de Sturler 01] Alla Sheffer and Eric de Sturler. "Parameterization of Faceted Surfaces for Meshing Using Angle Based Flattening." *Engineering with Computers* 17:3 (2001), 326–37.
- [Sheffer and Hart 02] A. Sheffer and J. C. Hart. "Seamster: Inconspicuous Low-Distortion Texture Seam Layout." In *Proc. of IEEE Visualization*, pp. 291–98. Washington, DC: IEEE Computer Society, 2002.
- [Sheffer et al. 05] Alla Sheffer, Bruno Lévy, Maxim Mogilnitsky, and Alexander Bogomyakov. "ABF++: Fast and Robust Angle Based Flattening." *ACM Transaction on Graphics* 24:2 (2005), 311–30.
- [Shen et al. 04] C. Shen, J. F. O'Brien, and J. R. Shewchuk. "Interpolating and Approximating Implicit Surfaces from Polygon Soup." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 896–904.
- [Shewchuk 94] J. R. Shewchuk. "An Introduction to the Conjugate Gradient Method without the Agonizing Pain." Technical report, Carnegie Mellon University, 1994.
- [Shewchuk 97] J. R. Shewchuk. "Delaunay Refinement Mesh Generation." Ph.D. thesis, Carnegie Mellon University, Pittsburgh, 1997.
- [Shewchuk 02] J. R. Shewchuk. "What Is a Good Linear Element? Interpolation, Conditioning, and Quality Measures." In *Proc. of International Meshing Roundtable*, pp. 115–26. New York: Springer, 2002.
- [Shi et al. 06] Lin Shi, Yizhou Yu, Nathan Bell, and Wei-Wen Feng. "A Fast Multigrid Algorithm for Mesh Deformation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 25:3 (2006), 1108–17.
- [Shi et al. 07] Xiaohan Shi, Kun Zhou, Yiyang Tong, Mathieu Desbrun, Hujun Bao, and Baining Guo. "Mesh Puppetry: Cascading Optimization of Mesh Deformation with Inverse Kinematics." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 26:3 (2007), 81:1–81:10.
- [Shoemake and Duff 92] K. Shoemake and T. Duff. "Matrix Animation and Polar Decomposition." In *Proc. of Graphics Interface*, pp. 258–64. Toronto: Canadian Information Processing Society, 1992.
- [Shreiner and Khronos OpenGL ARB Working Group 09] Dave Shreiner and Khronos OpenGL ARB Working Group. *OpenGL Programming Guide: The Official Guide to Learning OpenGL*, 7th edition. Reading, MA: Addison-Wesley Professional, 2009.
- [Sorkine and Alexa 07] O. Sorkine and M. Alexa. "As-Rigid-As-Possible Surface Modeling." In *Proc. of Eurographics Symposium on Geometry Processing*. Aire-la-Ville, Switzerland: Eurographics Association, 2007.
- [Sorkine et al. 04] O. Sorkine, D. Cohen-Or, Y. Lipman, M. Alexa, C. Rössl, and H.-P. Seidel. "Laplacian Surface Editing." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 179–88. Aire-la-Ville, Switzerland: Eurographics Association, 2004.

- [Springborn et al. 08] Boris Springborn, Peter Schröder, and Ulrich Pinkall. "Conformal Equivalence of Triangle Meshes." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 27:3 (2008), 1–11.
- [Steiner and Fischer 05] D. Steiner and A. Fischer. "Planar Parameterization for Closed Manifold Genus- g Meshes Using Any Type of Positive Weights." *JCISE* 5:2 (2005), 118–26.
- [Sumner and Popović 04] R. W. Sumner and J. Popović. "Deformation Transfer for Triangle Meshes." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 399–405.
- [Sumner et al. 07] R. Sumner, J. Schmid, and M. Pauly. "Embedded Deformation for Shape Manipulation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 26:3 (2007), 80:1–80:7.
- [Surazhsky and Gotsman 03] V. Surazhsky and C. Gotsman. "Explicit Surface Remeshing." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 20–30. Aire-la-Ville, Switzerland: Eurographics Association, 2003.
- [Surazhsky et al. 03] V. Surazhsky, P. Alliez, and C. Gotsman. "Isotropic Remeshing of Surfaces: A Local Parameterization Approach." In *Proc. of International Meshing Roundtable*, pp. 215–24. New York: Springer, 2003.
- [Surazhsky et al. 05] Vitaly Surazhsky, Tatiana Surazhsky, Danil Kirsanov, Steven J. Gortler, and Hugues Hoppe. "Fast Exact and Approximate Geodesics on Meshes." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 24:3 (2005), 553–60.
- [Szymczak et al. 02] A. Szymczak, D. King, and J. Rossignac. "Piecewise Regular Meshes: Construction and Compression." *Graphical Models* 64:3–4 (2002), 183–98.
- [Taubin 95] G. Taubin. "A Signal Processing Approach to Fair Surface Design." In *Proc. of ACM SIGGRAPH*, pp. 351–58. New York: ACM, 1995.
- [Taubin 00] G. Taubin. "Geometric Signal Processing on Polygonal Meshes." In *Eurographics 2000 State of the Art Report*. Aire-la-Ville, Switzerland: Eurographics Association, 2000.
- [Terzopoulos et al. 87] D. Terzopoulos, J. Platt, A. Barr, and K. Fleischer. "Elastically Deformable Models." In *Proc. of ACM SIGGRAPH*, pp. 205–14. New York: ACM, 1987.
- [Theisel et al. 04] H. Theisel, C. Rössl, R. Zayer, and H.-P. Seidel. "Normal Based Estimation of the Curvature Tensor for Triangular Meshes." In *Proc. of Pacific Graphics*, pp. 288–97. Washington, DC: IEEE Computer Society, 2004.
- [Toledo et al. 03] S. Toledo, D. Chen, and V. Rotkin. "TAUCS: A Library of Sparse Linear Solvers." <http://www.tau.ac.il/~stoledo/taucs>, 2003.
- [Tomasi and Manduchi 98] C. Tomasi and R. Manduchi. "Bilateral Filtering for Gray and Color Images." In *ICCV '98: Proc. of the 6th International Conference on Computer Vision*, pp. 839–46. Washington, DC: IEEE Computer Society, 1998.

- [Tong et al. 03] Y. Tong, S. Lombeyda, A. N. Hirani, and M. Desbrun. "Discrete Multiscale Vector Field Decomposition." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 22:3 (2003), 445–52.
- [Tong et al. 06] Y. Tong, P. Alliez, D. Cohen-Steiner, and M. Desbrun. "Designing Quadrangulations with Discrete Harmonic Forms." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 201–10. Aire-la-Ville, Switzerland: Eurographics Association, 2006.
- [Touma and Gotsman 98] C. Touma and C. Gotsman. "Triangle Mesh Compression." In *Proc. of Graphics Interface*, pp. 26–34. Toronto: Canadian Information Processing Society, 1998.
- [Trefethen and Bau 97] L. N. Trefethen and D. Bau. *Numerical Linear Algebra*. Philadelphia: SIAM, 1997.
- [Turk and Levoy 94] G. Turk and M. Levoy. "Zippered Polygon Meshes from Range Images." In *Proc. of ACM SIGGRAPH*, pp. 311–18. New York: ACM, 1994.
- [Tutte 60] W. Tutte. "Convex Representation of Graphs." *Proc. London Math. Soc.* 10 (1960), 304–20.
- [Valette and Chassery 04] S. Valette and J.-M. Chassery. "Approximated Centroidal Voronoi Diagrams for Uniform Polygonal Mesh Coarsening." *Computer Graphics Forum (Proc. Eurographics)* 23:3 (2004), 381–89.
- [Vallet and Lévy 08] Bruno Vallet and Bruno Lévy. "Spectral Geometry Processing with Manifold Harmonics." *Computer Graphics Forum (Proc. Eurographics)* 27:2 (2008), 251–60.
- [von Funck et al. 06] Wolfram von Funck, Holger Theisel, and Hans-Peter Seidel. "Vector Field-Based Shape Deformations." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 25:3 (2006), 1118–25.
- [Vorsatz et al. 03] J. Vorsatz, C. Rössl, and H.-P. Seidel. "Dynamic Remeshing and Applications." In *Proc. of Symposium on Solid Modeling and Applications*, pp. 167–75. New York: ACM, 2003.
- [Wardetzky et al. 07] M. Wardetzky, S. Mathur, F. Kälberer, and E. Grinspun. "Discrete Laplace Operators: No Free Lunch." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 33–37. Aire-la-Ville, Switzerland: Eurographics Association, 2007.
- [Welch and Witkin 92] W. Welch and A. Witkin. "Variational Surface Modeling." In *Proc. of ACM SIGGRAPH*, pp. 157–66. New York: ACM, 1992.
- [Welch and Witkin 94] W. Welch and A. Witkin. "Free-Form Shape Design Using Triangulated Surfaces." In *Proc. of ACM SIGGRAPH*, pp. 247–56. New York: ACM, 1994.
- [Wendland 05] H. Wendland. *Scattered Data Approximation*. Cambridge, UK: Cambridge University Press, 2005.
- [Westermann et al. 99] R. Westermann, L. Kobbelt, and T. Ertl. "Real-Time Exploration of Regular Volume Data by Adaptive Reconstruction of Iso-Surfaces." *The Visual Computer* 15 (1999), 100–111.

- [Wood et al. 04] Z. Wood, H. Hoppe, M. Desbrun, and P. Schröder. "Removing Excess Topology from Isosurfaces." *ACM Transaction on Graphics* 23:2 (2004), 190–208.
- [Wu and Kobbelt 03] J. Wu and L. Kobbelt. "Piecewise Linear Approximation of Signed Distance Fields." In *Proc. of Vision, Modeling, Visualization*, pp. 513–20. Berlin: Akademische Verlagsgesellschaft, 2003.
- [Wu and Kobbelt 04] J. Wu and L. Kobbelt. "A Stream Algorithm for the Decimation of Massive Meshes." In *Proc. of Graphics Interface*, pp. 185–92. Toronto: Canadian Information Processing Society, 2004.
- [Wu and Kobbelt 05] J. Wu and L. Kobbelt. "Structure Recovery via Hybrid Variational Surface Approximation." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 277–84.
- [Yan et al. 06] Dong-Ming Yan, Yang Liu, and Wenping Wang. "Quadric Surface Extraction by Variational Shape Approximation." In *Proceedings of Geometric Modeling and Processing 2006*, pp. 73–86. Berlin: Springer, 2006.
- [Yan et al. 09] Dong-Ming Yan, Bruno Lévy, Yang Liu, Feng Sun, and Wenping Wang. "Isotropic Remeshing with Fast and Exact Computation of Restricted Voronoi Diagram." *Computer Graphics Forum (Proc. Symp. Geometry Processing)* 28:5 (2009), 1445–54.
- [Yang et al. 08] Yong-Liang Yang, Junho Kim, Feng Luo, and Shi-Min Hu. "Optimal Surface Parameterization Using Inverse Curvature Map." *IEEE Transactions on Visualization and Computer Graphics* 14:4 (2008), 1054–66.
- [Yu et al. 04] Y. Yu, K. Zhou, D. Xu, X. Shi, H. Bao, B. Guo, and H.-Y. Shum. "Mesh Editing with Poisson-Based Gradient Field Manipulation." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 23:3 (2004), 644–51.
- [Zayer et al. 05a] R. Zayer, C. Rössl, Z. Karni, and H.-P. Seidel. "Harmonic Guidance for Surface Deformation." *Computer Graphics Forum (Proc. Eurographics)* 24:3 (2005), 601–10.
- [Zayer et al. 05b] R. Zayer, C. Rössl, and H.-P. Seidel. "Discrete Tensorial Quasi-Harmonic Maps." In *Proc. of Shape Modeling International*, pp. 276–85. Washington, DC: IEEE Computer Society, 2005.
- [Zayer et al. 05c] Rhaleb Zayer, Christian Rössl, and Hans-Peter Seidel. "Setting the Boundary Free: A Composite Approach to Surface Parameterization." In *SGP '05: Proceedings of the Symposium on Geometry Processing*. Aire-la-Ville, Switzerland: Eurographics Association, 2005. Article no. 91.
- [Zayer et al. 07] Rhaleb Zayer, Bruno Lévy, and Hans-Peter Seidel. "Linear Angle Based Parameterization." In *Proc. of Eurographics Symposium on Geometry Processing*, pp. 135–142. Aire-la-Ville, Switzerland: Eurographics Association, 2007.
- [Zhou et al. 05] K. Zhou, J. Huang, J. Snyder, X. Liu, H. Bao, B. Guo, and H.-Y. Shum. "Large Mesh Deformation Using the Volumetric Graph Laplacian." *ACM Transactions on Graphics (Proc. SIGGRAPH)* 24:3 (2005), 496–503.

- [Zhu et al. 10] Yongning Zhu, Eftychios Sifakis, Joseph Teran, and Achi Brandt. "An Efficient Multigrid Method for the Simulation of High-Resolution Elastic Solids." *ACM Transaction on Graphics* 29:2 (2010), 16:1–16:18.
- [Zorin et al. 97] D. Zorin, P. Schröder, and W. Sweldens. "Interactive Multiresolution Mesh Editing." In *Proc. of ACM SIGGRAPH*, pp. 259–68. New York: ACM, 1997.
- [Zorin et al. 00] D. Zorin, P. Schröder, T. DeRose, L. Kobbelt, A. Levin, and W. Sweldens. "Subdivision for Modeling and Animation." In *ACM SIGGRAPH 2000 Courses*. New York: ACM, 2000.