H. Pottmann — Publications since 1995

[60] H. Pottmann. Curve design with rational Pythagorean-hodograph curves. *Adv. Comput. Math.*, 3:147–170, 1995.

[61] H. Pottmann. Rational curves and surfaces with rational offsets. *Comput. Aided Geom. Design*, 12:175–192, 1995.

[62] H. Pottmann and G. Farin. Developable rational Bézier and B-spline surfaces. *Comput. Aided Geom. Design*, 12:513–531, 1995.

[63] A. Kolb, H. Pottmann, and H.-P. Seidel. Fair surface reconstruction using quadratic functionals. *Computer Graphics Forum*, 14:469–479, 1995.

[64] J. Hoschek and H. Pottmann. Interpolation and approximation with developable B-spline surfaces. In M. Dæhlen, T. Lyche, and L. L. Schumaker, editors, *Mathematical Methods for Curves and Surfaces*, pages 255–264. Vanderbilt University Press, Nashville, TN, 1995.

[65] A. Kolb, H. Pottmann, and H. P. Seidel. Surface reconstruction based upon minimum norm networks. In M. Daehlen, T. Lyche, and L. L. Schumaker, editors, *Mathematical Methods for Curves and Surfaces*, pages 293–304. Vanderbilt University Press, Nashville, TN, 1995.

[66] H. Pottmann. Studying NURBS curves and surfaces with classical geometry. In M. D. hlen, T. Lyche, and L. L. Schumaker, editors, *Mathematical Methods for Curves and Surfaces*, pages 413–438. Vanderbilt University Press, Nashville, TN, 1995.

[67] M. Wagner and H. Pottmann. Geometric motion design. In H. Bunke, T. Kanade, and H. Noltemeier, editors, *Modelling and Planning for Sensor based Intelligent Robot Systems*, volume 21 of *Series in Machine Perception and Artificial Intelligence*, pages 104–119. World Scientific, 1995.

[68] M. L. Mazure and H. Pottmann. Tchebycheff curves. In M. Gasca and C. A. Micchelli, editors, *Total Positivity and Its Applications*, pages 187–218. Kluwer Academic Publishers, Dordrecht, 1995.

[69] R. T. Farouki and H. Pottmann. Polynomial and rational Pythagorean-hodograph curves reconciled. In G. Mullineux, editor, *The Mathematics of Surfaces VI*, pages 355–378. Oxford University Press, 1996.

[70] N. Pfeifer and H. Pottmann. Surface models on the basis of a triangular mesh – surface reconstruction. *ISPRS Archives*, XXXI(3B):638–643, 1996.

[71] W. Lü and H. Pottmann. Pipe surfaces with rational spine curve are rational. *Comput. Aided Geom. Design*, 13:621–628, 1996.

[72] H. Pottmann, W. Lü, and B. Ravani. Rational ruled surfaces and their offsets. *Graph. Models Img. Processing*, 58:544–552, 1996.

[73] M. Peternell and H. Pottmann. Designing rational surfaces with rational offsets. In F. Fontanella, K. Jetter, and P. J. Laurent, editors, *Advanced Topics in Multivariate Approximation*, pages 275–286. World Scientific, 1996.

[74] H. Pottmann and P. Paukowitsch. Inflections of planar surface curves. *Comput. Aided Geom. Design*, 14:293–297, 1997.
[Zbl. 0906.68159, MR 97k:65050].

[75] M. Peternell and H. Pottmann. Computing rational parametrizations of canal surfaces. *J. Symbolic Comput.*, 23:255–266, 1997.

[76] H. Pottmann. General offset surfaces. *Neural, Parallel & Scient. Comput.*, 5:55–80, 1997.

[77] J. Wallner and H. Pottmann. Spline orbifolds. In A. Le Méhauté, C. Rabut, and L. L. Schumaker, editors, *Curves and Surfaces with Applications in CAGD*, pages 445–464. Vanderbilt University Press, 1997.
[Zbl. 0938.65042, MR 99j:65263].

[78] J. Wallner and H. Pottmann. Rational blending surfaces between quadrics. *Comput. Aided Geom. Design*, 14:407–419, 1997.
[MR 1456012].

[79] H. Pottmann and M. Wagner. Principal surfaces. In T. Goodman and R. Martin, editors, *The Mathematics of Surfaces VII*, pages 337–362. Information Geometers Ltd., 1997.

[80] H. Pottmann and M. Peternell. Applications of Laguerre geometry in CAGD. *Comput. Aided Geom. Design*, 15:165–186, 1998.
[MR 99c:65037].

[81] M. Peternell and H. Pottmann. A Laguerre geometric approach to rational offsets. *Comput. Aided Geom. Design*, 15:223–249, 1998.

[82] H. Pottmann, M. Peternell, and B. Ravani. Contributions to computational line geometry. In D. P. Chi, H. I. Choi, M.-S. Kim, and R. Martin, editors, *Differential/Topological Techniques in Geometric Modeling and Processing '98*, pages 43–81. Bookplus Press, 1998, ISBN 89-86518-10-0. Proceedings of the Workshop in Pohang, Korea, April 7-8,1998.

[83] H. Pottmann, I.-K. Lee, and T. Randrup. Reconstruction of kinematic surfaces from scattered data. In H. Kahmen, E. Brückl, and T. Wunderlich, editors, *Proceedings Symposium on Geodesy for Geotechnical and Structural Engineering*, pages 483–488. Int. Assoc. of Geodesy, 1998. held in Eisenstadt, Austria, April 20-22, 1998.

[84] M. Neamtu, H. Pottmann, and L. L. Schumaker. Designing NURBS cam profiles using trigonometric splines. *ASME J. Mech. Design*, 120:175–180, 1998.

[85] S. Leopoldseder and H. Pottmann. Approximation of developable surfaces with cone spline surfaces. *Computer-Aided Design*, 30:571–582, 1998.

[86] H. Pottmann, M. Peternell, and B. Ravani. Approximation in line space: applications in robot kinematics and surface reconstruction. In J. Lenarčič and M. Husty, editors, *Advances in Robot Kinematics: Analysis and Control*, pages 403–412. Kluwer, 1998.

[87] H. Pottmann and T. Randrup. Rotational and helical surface approximation for reverse engineering. *Computing*, 60:307–322, 1998.

[88] J. Wallner, H.-Y. Chen, and H. Pottmann. Galilei Laguerre geometry and rational circular offsets. *Beitr. Algebra Geom.*, 39:291–305, 1998.
[Zbl. 0917.51003, MR 99g:53016].

[89] H. Pottmann, H.-Y. Chen, and I. K. Lee. Approximation by profile surfaces. In R. Cripps, editor, *The Mathematics of Surfaces VIII*, pages 17–36. Information Geometers, Wellesley MA, 1998.

[90] H. Pottmann and M. Wagner. Contributions to motion based surface design. *Int. J. Shape Modeling*, 4:183–196, 1998.

[91] M. Neamtu, H. Pottmann, and L. L. Schumaker. Dual focal splines and rational curves with rational offsets. *Mathematical Engineering in Industry*, 7:139–154, 1998.

[92] H.-Y. Chen and H. Pottmann. Approximation by ruled surfaces. *J. Comput. Appl. Math.*, 102:143–156, 1999.

[93] H. Pottmann, M. Peternell, and B. Ravani. An introduction to line geometry with applications. *Computer-Aided Design*, 31:3–16, 1999.

[94] M. Peternell, H. Pottmann, and B. Ravani. On the computational geometry of ruled surfaces. *Computer-Aided Design*, 31:17–32, 1999.

[95] G. Glaeser, J. Wallner, and H. Pottmann. Collision-free 3-axis milling and selection of cutting tools. *Computer-Aided Design*, 31:225–232, 1999.
[Zbl. 01966666].

[96] H.-Y. Chen, I.-K. Lee, S. Leopoldseder, H. Pottmann, T. Randrup, and J. Wallner. On surface approximation using developable surfaces. *Graph. Models Img. Processing*, 61:110–124, 1999.
[Zbl. 0978.68576].

[97] H. Pottmann, J. Wallner, G. Glaeser, and B. Ravani. Geometric criteria for gouge-free three-axis milling of sculptured surfaces. *ASME J. Mech. Design*, 121:241–248, 1999.

[98] J. Wallner, G. Glaeser, and H. Pottmann. Geometric contributions to 3-axis milling of sculptured surfaces. In G. J. Olling, B. K. Choi, and R. B. Jerard, editors, *Machining Impossible Shapes*, pages 33–41. Kluwer Academic Publ., Boston, 1999.

[99] H. Pottmann and J. Wallner. Approximation algorithms for developable surfaces. *Comput. Aided Geom. Design*, 16:539–556, 1999.
[Zbl. 0997.65032, MR 2000d:65027].

[100] H. Pottmann. A geometric approach to variation diminishing freeform curve schemes. In J. M. Peña, editor, *Shape preserving representations in Computer-Aided Design*, pages 119–131. Nova Science Publishers, New York, 1999.

[101] I.-K. Lee, J. Wallner, and H. Pottmann. Scattered data approximation with kinematic surfaces. In *Proceedings of the Sampling Theory and Applications '99 conference in Loen, Norway*, pages 72–77. Norges teknisk-naturvitenskapelige universitet, Institutt for matematiske fag, Trondheim, 1999, ISBN 0-8265-1356-5.

[102] H. Pottmann and B. Ravani. Singularities of motions constrained by contacting surfaces. *Mech. Mach. Theory*, 35:963–984, 2000.

[103] H. Pottmann, R. Krasauskas, B. Hamann, K. Joy, and W. Seibold. On piecewise linear approximation of quadratic functions. *J. Geom. Graphics*, 4:31–53, 2000.

[104] M. Peternell and H. Pottmann. Interpolating functions on lines in 3-space. In A. Cohen, C. Rabut, and L. L. Schumaker, editors, *Curve and Surface Fitting: Saint Malo 1999*, pages 351–358. Vanderbilt University Press, Nashville, TN, 2000.

[105] J. Wallner and H. Pottmann. On the geometry of sculptured surface machining. In P.-J. Laurent, P. Sablonnière, and L. L. Schumaker, editors, *Curve and Surface Design: Saint Malo 1999*, pages 417–432. Vanderbilt University Press, Nashville, 2000, ISBN 0-8265-1356-5.

[106] J. Wallner, R. Krasauskas, and H. Pottmann. Error propagation in geometric constructions. *Computer-Aided Design*, 32:631–641, 2000.

[107] H. Pottmann, B. Odehnal, M. Peternell, J. Wallner, and R. Ait Haddou. On optimal tolerancing in Computer-Aided Design. In R. Martin and W. Wang, editors, *Geometric Modeling and Processing 2000*, pages 347–363. IEEE Computer Society, Los Alamitos, Calif., 2000, ISBN 0-7695-0562-7.

[108] H. Pottmann and M. Peternell. On approximation in spaces of geometric objects. In R. Cipolla and R. Martin, editors, *The Mathematics of Surfaces IX*, pages 438–458. Springer, 2000, ISBN 1852333588.

[109] H. Pottmann and M. Peternell. Envelopes – computational theory and applications. In B. Falcidieno, editor, *Spring Conference on Computer Graphics 2000*, pages 3–23. Comenius University, Bratislava, 2000, ISBN 80-223-1486-2. Proceedings of the conference in Budmerice, May 3-6, 2000.

[110] M. Bertram, J. C. Barnes, B. Hamann, K. I. Joy, H. Pottmann, and D. Wushour. Piecewise optimal triangulation of scattered data in the plane. *Comput. Aided Geom. Design*, 17:767–787, 2000.

[111] B. Odehnal and H. Pottmann. Computing with discrete models of ruled surfaces and line congruences. *Electron. J. Comput. Kinematics*, 1(1):§20, 2002. Proceedings of the workshop 'Computational Kinematics' in Seoul, May 19-22, 2001.

[112] H. Pottmann, J. Wallner, and S. Leopoldseder. Kinematical methods for the classification, reconstruction and inspection of surfaces. In *SMAI 2001: Congrès national de mathématiques appliquées et industrielles*, Publications de l'Équipe de Mathématiques Appliquées (Numéro special), pages 51–60. Université de Technologie de Compiègne, 2001.

[113] J. Wallner, T. Sakkalis, T. Maekawa, H. Pottmann, and G. Yu. Self-intersections of offset curves and surfaces. *Int. J. Shape Modeling*, 7:1–21, 2001.

[114] R. T. Farouki and H. Pottmann. Exact Minkowski products of n complex disks. *Reliab. Comput.*, 8:43–66, 2002.

[115] T. Smith, R. T. Farouki, M. al Kandari, and H. Pottmann. Optimal slicing of free-form surfaces. *Comput. Aided Geom. Design*, 19:43–64, 2002.

[116] H. Pottmann and S. Leopoldseder. Geometries for CAGD. In G. Farin, J. Hoschek, and M.-S. Kim, editors, *Handbook of 3D Modeling*, pages 43–73. Elsevier, 2002. [MR 1928536].

[117] D. Hönigmann, J. Ruisz, and H. Pottmann. Fast model based segmentation of ultrasound data using an active image. In *Biomedical Imaging, 2002 IEEE International Symposium on*, pages 225–228. IEEE Press, 2002, ISBN 0-7803-7584-X. Proceedings of the symposion July 7–10, 2002, Washington DC.

[118] M. Hofer, H. Pottmann, and B. Ravani. Subdivision algorithms for motion design based on homologous points. In J. Lenarčič and F. Thomas, editors, *Advances in Robot Kinematics*, pages 235–244. Kluwer Academic Publ., 2002.

[119] H. Pottmann, S. Leopoldseder, and M. Hofer. Simultaneous registration of multiple views of a 3D object. *ISPRS Archives*, 34(3A):265–270, 2002.

[120] H. Pottmann, S. Leopoldseder, J. Wallner, and M. Peternell. Recognition and reconstruction of special surfaces from point clouds. *ISPRS Archives*, 34(3A):271–276, 2002.

[121] M. Peternell and H. Pottmann. Approximation in the space of planes: applications to geometric modeling and reverse engineering. *RACSAM Rev. R. Acad. Cienc. Exactas Fís. Nat. Ser. A Mat.*, 96(2):243–256, 2002.
[MR 2004h:65019].

[122] H. Pottmann, S. Leopoldseder, and M. Hofer. Approximation with active B-spline curves and surfaces. In S. Coquillart, S.-M. Hu, and H.-Y. Shum, editors, *10th Pacific Conference on Computer Graphics and Applications*, pages 8–25. IEEE Press, 2002, ISBN 0-7695-1784-6. Proceedings of the conference held at Tsinghua University, Beijing, October 9-11, 2002.

[123] J.-H. Yoon, H. Pottmann, and Y.-S. Lee. Locally optimal cutting positions for five-axis sculptured surface machining. *Computer-Aided Design*, 35:69–81, 2003.

[124] H. Pottmann and M. Hofer. Geometry of the squared distance function to curves and surfaces. In H.-C. Hege and K. Polthier, editors, *Visualization and Mathematics III*, pages 223–244. Springer, 2003.
[MR 2005a:53004].

[125] H. Pottmann and S. Leopoldseder. A concept for parametric surface fitting which avoids the parametrization problem. *Comput. Aided Geom. Design*, 20:343–362, 2003.
[MR 2004h:65019].

[126] J. Ruisz, D. Hönigmann, and H. Pottmann. Segmentation and modeling of approximately rotationally symmetric objects in 3D ultrasound. In *3-D Digital Imaging and Modeling (3DIM 2003), 4th International Conference on*, pages 124–131. IEEE Press, 2003, ISBN 0-7695-1991-1. Proceedings of the conference in Banff, Canada, Oct. 6-10, 2003.

[127] H. Mühlthaler and H. Pottmann. Computing the Minkowski sum of ruled surfaces. *Graphical Models*, 65:369–384, 2003.

[128] M. Hofer, H. Pottmann, and B. Ravani. Geometric design of motions constrained by a contacting surface pair. *Comput. Aided Geom. Design*, 20:523–547, 2003.
[MR 2004m:65027].

[129] J. K. Eberharter, H. Pottmann, and B. Ravani. Stereographic projection of Study's quadric. In *Dresden Symposium Geometry—Proceedings*, pages 82–89, Dresden, 2003. Tech. Univ. Dresden.
[MR 2004m:51045].

[130] J. Wallner and H. Pottmann. Variational interpolation of subsets. *Constr. Approx.*, 20:233–248, 2004.
[MR 2005a:41012].

[131] H. Pottmann, S. Leopoldseder, and M. Hofer. Registration without ICP. *Computer Vision and Image Understanding*, 95(1):54–71, 2004.

[132] H. Pottmann, M. Hofer, and B. Ravani. Variational motion design. In J. Lenarčič and C. Galletti, editors, *On Advances in Robot Kinematics*, pages 361–370. Kluwer, 2004.

[133] M. Hofer, H. Pottmann, and B. Ravani. From curve design algorithms to the design of rigid body motions. *The Visual Computer*, 20(5):279–297, 2004.

[134] H. Pottmann, M. Hofer, B. Odehnal, and J. Wallner. Line geometry for 3D shape understanding and reconstruction. In T. Pajdla and J. Matas, editors, *Computer Vision — ECCV 2004, Part I*, volume 3021 of *Lecture Notes in Computer Science*, pages 297–309. Springer, 2004, ISBN 3-540-21984-6.

[135] H. Pottmann, T. Steiner, M. Hofer, C. Haider, and A. Hanbury. The isophotic metric and its application to feature sensitive morphology on surfaces. In T. Pajdla and J. Matas, editors, *Computer Vision — ECCV 2004, Part IV*, volume 3024 of *Lecture Notes in Computer Science*, pages 560–572. Springer, 2004.

[136] M. Hofer and H. Pottmann. Energy-minimizing splines in manifolds. *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH 2004)*, 23(3):284–293, 2004.

[137] M. Hofer and H. Pottmann. Orientierung von Laserscanner-Punktwolken. *Vermessung & Geoinformation*, 91:297–306, 2003.

[138] N. J. Mitra, N. Gelfand, H. Pottmann, and L. Guibas. Registration of point cloud data from a geometric optimization perspective. In R. Scopigno and D. Zorin, editors, *Eurographics Symposium on Geometry Processing*, pages 23–32, 2004.

[139] H. Pottmann, S. Leopoldseder, M. Hofer, T. Steiner, and W. Wang. Industrial Geometry: Recent advances and applications in CAD. *Computer-Aided Design Appl.*, 1:513–522, 2004.

[140] H. Pottmann, S. Leopoldseder, M. Hofer, T. Steiner, and W. Wang. Industrial Geometry: Recent advances and applications in CAD. *Computer-Aided Design*, 37(7):751–766, 2005.

[141] M. Peternell, H. Pottmann, T. Steiner, and H. Zhao. Swept volumes. *Computer-Aided Design Appl.*, 2:599–608, 2005.

[142] N. Gelfand, N. J. Mitra, L. J. Guibas, and H. Pottmann. Robust global registration. In M. Desbrun and H. Pottmann, editors, *SGP 2005: Third Eurographics Symposium on Geometry processing*, pages 197–206. Eurographics Association, 2005, ISBN 3-905673-24-X.

[143] H. Pottmann and M. Hofer. A variational approach to spline curves on surfaces. *Comput. Aided Geom. Design*, 22(7):693–709, 2005.

[144] M. Hofer, B. Odehnal, H. Pottmann, T. Steiner, and J. Wallner. 3D shape recognition and reconstruction based on line element geometry. In *Tenth IEEE International Conference on Computer Vision*, volume 2, pages 1532–1538. IEEE Computer Society, 2005, ISBN 0-7695-2334-X.

[145] H. Pottmann, Q.-X. Huang, Y.-L. Yang, and S.-M. Hu. Geometry and convergence analysis of algorithms for registration of 3D shapes. *Int. J. Computer Vision*, 67(3):277–296, 2006.

[146] W. Wang, H. Pottmann, and Y. Liu. Fitting B-spline curves to point clouds by squared distance minimization. *ACM Trans. Graphics*, 25:214–238, 2006.

[147] J. Wallner and H. Pottmann. Intrinsic subdivision with smooth limits for graphics and animation. *ACM Trans. Graphics*, 25(2):356–374, 2006.

[148] Y. Liu, H. Pottmann, and W. Wang. Constrained 3D shape reconstruction using a combination of surface fitting and registration. *Computer-Aided Design*, 38(6):572–583, 2006.

[149] Y. Lai, S.-H. Hu, and H. Pottmann. Surface fitting based on a feature sensitive parametrization. *Computer-Aided Design*, 38(7):800–807, 2006.

[150] Q.-X. Huang, S. Flöry, N. Gelfand, M. Hofer, and H. Pottmann. Reassembling fractured objects by geometric matching. *ACM Trans. Graphics*, 25(3):569–578, 2006. Proc. SIGGRAPH 2006.

[151] Y. Liu, H. Pottmann, J. Wallner, Y.-L. Yang, and W. Wang. Geometric modeling with conical meshes and developable surfaces. *ACM Trans. Graphics*, 25(3):681–689, 2006. Proc. SIGGRAPH.

[152] Y.-L. Yang, Y.-K. Lai, S.-M. Hu, and H. Pottmann. Robust principal curvatures on multiple scales. In K. Polthier and A. Sheffer, editors, *SGP 2006: 4th Eurographics Symposium on Geometry processing*, pages 223–226. Eurographics Association, 2006.

[153] B. Odehnal, H. Pottmann, and J. Wallner. Equiform kinematics and the geometry of line elements. *Beitr. Algebra Geom.*, 47(2):567–582, 2006.

[154] Y.-K. Lai, Q.-Y. Zhou, S.-M. Hu, J. Wallner, and H. Pottmann. Robust feature classification and editing. *IEEE Trans. Vis. Comp. Graphics*, 13(1):34–45, 2007.

[155] J. Wallner, H. Pottmann, and M. Hofer. Fair webs. *The Visual Computer*, 23(1):83–94, 2007.

[156] H. Pottmann, S. Brell-Cokcan, and J. Wallner. Discrete surfaces for architectural design. In P. Chenin, T. Lyche, and L. L. Schumaker, editors, *Curves and Surface Design: Avignon 2006*, pages 213–234. Nashboro Press, 2007, ISBN 978-0-9728482-7-5.

[157] O. Aichholzer, F. Aurenhammer, T. Hackl, B. Kornberger, M. Peternell, and H. Pottmann. Approximating boundary-triangulated objects with balls. In *Proc. 23rd European Workshop on Computational Geometry*, pages 130–133. TU Graz, 2007.

[158] H. Pottmann, Y. Liu, J. Wallner, A. Bobenko, and W. Wang. Geometry of multi-layer freeform structures for architecture. *ACM Trans. Graphics*, 26(3):#65, 1–11, 2007. Proc. SIGGRAPH.

[159] M. Kilian, N. J. Mitra, and H. Pottmann. Geometric modeling in shape space. *ACM Trans. Graphics*, 26(3):#64, 1–8, 2007. Proc. SIGGRAPH.

[160] H. Pottmann and Y. Liu. Discrete surfaces in isotropic geometry. In M. Sabin and J. Winkler, editors, *Mathematics of Surfaces XII*, volume 4647 of *LNCS*, pages 341–363. Springer, 2007.

[161] H. Pottmann and J. Wallner. The focal geometry of circular and conical meshes. *Adv. Comp. Math*, 2007. to appear.

[162] J. Wallner and H. Pottmann. Infinitesimally flexible meshes and discrete minimal surfaces. *Monatshefte Math.*, 2007. to appear.

[163] F. Aurenhammer, J. Wallner, M. Peternell, and H. Pottmann. Voronoi diagrams for oriented spheres. In C. Gold, editor, *Proc. ISVD'07: 4th Int. Conf. Voronoi Diagrams in Science and Engineering*, pages 33–37. IEEE Computer Society, 2007, ISBN 0-7695-2869-4.

[164] H. Pottmann, J. Wallner, Y.-L. Yang, Y.-K. Lai, and S.-M. Hu. Principal curvatures from the integral invariant viewpoint. *Comput. Aided Geom. Design*, 24:428–442, 2007.

[165] N. J. Mitra, S. Flöry, M. Ovsjanikov, N. Gelfand, L. Guibas, and H. Pottmann. Dynamic geometry registration. In A. Belyaev and M. Garland, editors, *Symposium on Geometry Processing*, pages 173–182. Eurographics, 2007.

Technical Reports

[166] M. Peternell, H. Pottmann, and T. Steiner. Hough transform and Laguerre geometry for the recognition and reconstruction of special 3D shapes. Technical Report 100, Institute of Geometry, April 2003. *URL http://www.geometrie.tuwien.ac.at/peternell/hough_lag1.pdf.*

[167] S. Leopoldseder, H. Pottmann, and H. Zhao. The d^2-tree: A hierarchical representation of the squared distance function. Technical Report 101, Institute of Geometry, March 2003. *URL http://www.geometrie.tuwien.ac.at/ig/papers/t_rep101.pdf*.

[168] H. Pottmann and M. Hofer. Algorithms for constrained minimization of quadratic functions — geometry and convergence analysis. Technical Report 121, Geometry Preprint Series, Vienna Univ. of Technology, January 2004. *URL http://www.geometrie.tuwien.ac.at/ig/papers/foot_tr121.pdf*.

[169] M. Hofer and H. Pottmann. Designing energy-minimizing rigid body motions in the presence of obstacles. Technical Report 142, Geometry Preprint Series, Vienna Univ. of Technology, July 2005. *URL http://www.geometrie.tuwien.ac.at/ig/papers/tr142.pdf*.

[170] H. Pottmann, J. Wallner, Q. Huang, and Y.-L. Yang. Integral invariants for robust geometry processing. preprint, TU Wien, 2006. *URL http://dmg.tuwien.ac.at/wallner/iirgp.pdf*.

[171] Q.-X. Huang and H. Pottmann. Automatic and robust multi-view registration. Technical Report 152, Geometry Preprint Series, Vienna Univ. of Technology, December 2005. *URL http://www.geometrie.tuwien.ac.at/ig/papers/tr152.pdf*.

[172] T. Fidler, M. Grasmair, H. Pottmann, and O. Scherzer. Inverse problems of integral invariants and signatures. Technical Report 2007-01, Johann Radon Inst. Comp. Appl. Math, 2007. *URL http://www.ricam.oeaw.ac.at/publications/reports/07/rep07-01.pdf*.

[173] H. Pottmann. Generalized conical meshes and their support structures. Technical Report 158, Geometry Preprint Series, Vienna Univ. of Technology, April 2006.

[174] N. Thorstensen, M. Hofer, G. Sapiro, and H. Pottmann. Measuring cortical thickness from volumetric MRI data. Geometry Preprint 170, Vienna University of Technology, December 2006. *URL http://dmg.tuwien.ac.at/fg4/papers/tr170.pdf*.

[175] G. Nawratil, H. Pottmann, and B. Ravani. Generalized penetration depth computation based on kinematical geometry. Geometry Preprint 172, Vienna University of Technology, March 2007. *URL http://www.geometrie.tuwien.ac.at/nawratil/gpdcbokg.pdf*.

[176] H. Pottmann, P. Grohs, and N. J. Mitra. Laguerre minimal surfaces, isotropic geometry and linear elasticity. Technical Report 180, Geometry Preprint Series, Vienna Univ. of Technology, July 2007. *URL http://www.geometrie.tuwien.ac.at/grohs/papers/laguerre.pdf*.

[177] G. Nawratil and H. Pottmann. Subdivision schemes for the fair discretization of the spherical motion group. Technical Report 182, Geometry Preprint Series, Vienna

Univ. of Technology, June 2007. *URL http://www.geometrie.tuwien.ac.at/nawratil/gitter_neu.pdf*.

Book

[178] H. Pottmann and J. Wallner. *Computational Line Geometry*. Mathematics + Visualization. Springer, Heidelberg, 2001. ISBN 3-540-42058-4.
[Zbl. 1006.51015, MR 2002f:53001].

[179] H. Pottmann, A. Asperl, M. Hofer, and A. Kilian. *Architectural Geometry*. Bentley Institute Press, 2007. to appear.

Editorial Work

[180] H. Pottmann, Editor. Industrial geometry. *Computer-Aided Design*, 36(4), 2004. Special issue.

[181] H. Pottmann and S.-M. Hu, editors. *2004 Geometric Modeling and Processing, Theory and Applications*. IEEE Computer Society, 2004. ISBN 0-7695-2078-2. Proceedings of the GMP conference in Beijing, April 13-15, 2004.

[182] H. Pottmann, Editor. Geometric modeling and processing. *Comput. Aided Geom. Design*, 21(8), 2004. Special issue.

[183] H. Pottmann, Editor. Geometric modeling and processing. *Computer-Aided Design*, 37(5), 2005. Special section.

[184] M. Desbrun and H. Pottmann, editors. *SGP 2005: Third Eurographics Symposium on Geometry processing*. Eurographics Association, 2005. ISBN 3-905673-24-X. Proceedings of the Conference in Vienna, July 4-6.