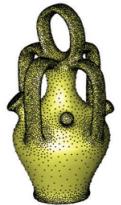
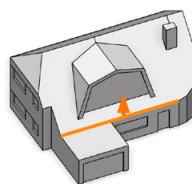


Peter Wonka's Publications

- Please note that in Computer Graphics several conferences started to publish their proceedings as special issues of journals several years ago. For example, ACM SIGGRAPH publishes its proceedings in ACM Transactions on Graphics, IEEE Visualization publishes its proceedings in IEEE Transactions on Visualization and Computer Graphics.

Refereed Publications

2014



A Safe Screening Rule for Sparse Logistic Regression

Jie Wang, Jiayu Zhou, Jun Liu, Peter Wonka, Jieping Ye
NIPS. 2014. [[pdf](#)]

Structure Completion for Facade Layouts

Lubin Fan, Przemyslaw Musalski, Ligang Liu, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2014. [[pdf](#)] [[additional materials](#)] [[video1](#)] [[video2](#)]

What Makes London Work Like London?

Sawsan Al-Halawani, Yongliang Yang, Peter Wonka, Niloy Mitra
Computer Graphics Forum (Proceedings of SGP). 2014. [[pdf](#)]

Blue-Noise Remeshing with Farthest Point Optimization

Dong-Ming Yan, Jianwei Guo, Xiaohong Jia, Xiaopeng Zhang, Peter Wonka
Computer Graphics Forum (Proceedings of SGP). 2014. [[pdf](#)][[additional materials](#)] [[video](#)]

Computing layouts with deformable templates

Chi-han Peng, Yong-Liang Yang, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2014. [[pdf](#)] [[additional materials](#)] [video]

Inverse Procedural Modeling of Facade Layouts

Fuzhang Wu, Dong-Ming Yan, Weiming Dong, Xiaopeng Zhang, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2014. [[pdf](#)] [[additional materials](#)] [[video](#)] [[video 2](#)]
[[arXiv](#) - early version]

PushPull++

Markus Lipp, Peter Wonka, Pascal Mueller
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2014. [[pdf](#)] [[video](#)]

Procedural Design of Exterior Lighting for Buildings with Complex Constraints

Michael Schwarz, Peter Wonka
ACM Transactions on Graphics, 2014. [[pdf](#)] [[additional materials](#)]

Exploring Quadrangulations

Chi-han Peng, Michael Barton, Caigui Jiang, Peter Wonka
ACM Transactions on Graphics, 2014. [[pdf](#)] [[video](#)]

Edit Propagation using Geometric Relationship Functions

Paul Guerrero, Stefan Jeschke, Michael Wimmer, Peter Wonka
ACM Transactions on Graphics, 2014. [[pdf](#)]

On-the-fly Generation and Rendering of Infinite Cities on the GPU

Markus Steinberger, Michael Kenzel, Bernhard Kainz, Joerg Mueller, Peter Wonka, Dieter Schmalstieg
Computer Graphics Forum (Proceedings of Eurographics). 2014. [[pdf](#)] [[video](#)]

Combined Derivation and Rendering of Shape-Grammars on the GPU

Markus Steinberger, Michael Kenzel, Bernhard Kainz, Peter Wonka, Dieter Schmalstieg
Computer Graphics Forum (Proceedings of Eurographics). 2014. [[pdf](#)] [[video](#)]

Automatic Generation of Tourist Brochures

Michael Birsak, Przemyslaw Musalski, Peter Wonka, Michael Wimmer
Computer Graphics Forum (Proceedings of Eurographics). 2014. [[pdf](#)] [[examples](#)] [[video](#)]

Low-Resolution Remeshing using the Localized Restricted Voronoi Diagram

Dongming Yan, Guanbo Bao, Xiaopeng Zhang, Peter Wonka
IEEE Transactions on Visualization and Graphics (accepted), 2014. [[pdf](#)]

Unbiased Sampling and Meshing of Isosurfaces

Dong-Ming Yan, Johannes Wallner, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics. 2014. [[pdf](#)]

A Highly Scalable Parallel Algorithm for Isotropic Total Variation Models

Jie Wang, Qingyang Li, Sen Yang, Wei Fan, Peter Wonka, Jieping Ye

ICML. 2014. [[pdf](#)]**Scaling SVM and Least Absolute Deviations via Exact Data Reduction**

Jie Wang, Peter Wonka, Jieping Ye

ICML. 2014. [[pdf](#)]**Efficient Triangulation of Poisson-disk Sampled Point Sets**

Jianwei Guo, Dongming Yan, Guanbo Bao, Weiming Dong, Xiaopeng Zhang, Peter Wonka

Visual Computer (Proceedings of CGI). 2014. [[pdf](#)]**Patch Layout Generation by Detecting Feature Networks**

Yuanhao Cao, Dongming Yan, Peter Wonka

Computers & Graphics (Proceedings of SMI). 2014. [[pdf](#)] [[video](#)]

2013

**Urban Pattern: Layout Design by Hierarchical Domain Splitting**

Yong-Liang Yang, Jun Wang, Etienne Vouga, Peter Wonka

ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia). 2013. [[pdf](#)] [[video](#)] [[supp1](#)] [[supp2](#)]**Generating and Exploring Good Building Layouts**

Fan Bao, Dong-Ming Yan, Niloy J. Mitra, and Peter Wonka

ACM Transactions on Graphics (Proceedings of ACM Siggraph). 2013. [[pdf](#)] [[additional materials](#)] [[video](#)]**Gap Processing for Adaptive Maximal Poisson-Disk Sampling**

Dong-Ming Yan and Peter Wonka

ACM Transactions on Graphics. 2013. [[pdf](#)] [[additional materials](#)]**Procedural Facade Variations from a Single Layout**

Fan Bao, Michael Schwarz, Peter Wonka

ACM Transactions on Graphics. 2013. [[pdf](#)]**Tensor Completion for Estimating Missing Values in Visual Data**

Ji Liu, Przemyslaw Musialski, Peter Wonka, Jieping Ye

IEEE Transactions on Pattern Analysis and Machine Intelligence (extension of the ICCV 2009 paper). 2013. [[pdf](#)]**An Efficient ADMM Algorithm for Multidimensional Anisotropic Total Variation Regularization Problems**

Sen Yang, Jie Wang, Wei Fan, Xiatian Zhang, Peter Wonka, and Jieping Ye

SIGKDD. 2013. [[pdf](#)]**Lasso Screening Rules via Dual Polytope Projection**

Jie Wang, Jiayu Zhou, Peter Wonka, Jieping Ye

NIPS. 2013. [[pdf](#)]**Connectivity Editing for Quad-Dominant Meshes**

Chi-han Peng and Peter Wonka

Symposium on Geometry Processing. 2013. [[pdf](#)] [[additional materials](#)]**Illustrating the Disassembly of 3D Models**

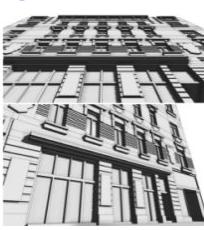
Jianwei Guo, Dong-Ming Yan, Er Li, Weiming Dong, Peter Wonka, Xiaopeng Zhang

Computers and Graphics (Proceedings of Shape Modeling International). 2013. [[pdf](#)]**A Survey of Urban Reconstruction**Przemyslaw Musialski, Peter Wonka, Daniel G. Aliaga, Michael Wimmer, Luc van Gool and Werner Purgathofer
Computer Graphics Forum. 2013. [[pdf](#)]**A Framework for Interactive Image Color Editing**

Przemyslaw Musialski, Ming Cui, Jieping Ye, Anshuman Razdan, Peter Wonka

Visual Computer. 2013. [[pdf](#)]

2012



Interactive Coherence-Based Façade Modeling

Przemyslaw Musalski, Michael Wimmer, Peter Wonka
 Computer Graphics Forum (Proceedings of Eurographics). 2012.

[\[pdf\]](#) [\[additional materials\]](#) [\[webpage\]](#)

Feature Grouping and Selection Over an Undirected Graph

Sen Yang, Sen Yang, Lei Yuan, Ying-Cheng Lai, Xiaotong Shen, Peter Wonka, Jieping Ye
 ACM SIGKDD. 2012. [\[pdf\]](#)

A Multi-Stage Framework for Dantzig Selector and LASSO

Ji Liu, Peter Wonka, Jieping Ye
 Journal of Machine Learning Research (extension of the NIPS 2010 paper). 2012. [\[pdf\]](#)

Sparse Non-Negative Tensor Factorization Using Columnwise Coordinate Descent

Liu, Liu, Wonka, Ye
 Pattern Recognition. 2012. [\[pdf\]](#)

2011

**Connectivity Editing for Quadrilateral Meshes**

Chi-han Peng, Eugene Zhang, Yoshihiro Kobayashi, Peter Wonka
 ACM Transactions on Graphics (Proceedings of Siggraph Asia). 2011.
[\[pdf\]](#) [\[additional materials\]](#) [\[video\]](#) ([youtube](#))

Interactive Architectural Modeling with Procedural Extrusions

Tom Kelly, Peter Wonka
 ACM Transactions on Graphics. 2011. [\[pdf\]](#) [\[additional materials\]](#)

Estimating Color and Texture Parameters for Vector Graphics

Stefan Jeschke, David Cline, Peter Wonka
 Computer Graphics Forum (Proceedings of Eurographics). 2011.
[\[pdf\]](#) [\[additional materials\]](#) [\[video\]](#) ([youtube](#))

Interactive Modeling of City Layouts using Layers of Procedural Content

Markus Lipp, Daniel Scherzer, Peter Wonka, Michael Wimmer
 Computer Graphics Forum (Proceedings of Eurographics). 2011. [\[pdf\]](#) [\[video\]](#) ([youtube](#))

Geometry Synthesis on Surfaces Using Field-Guided Shape Grammars

Yuanyuan Li, Fan Bao, Eugene Zhang, Yoshihiro Kobayashi, Peter Wonka
 IEEE Transactions on Visualization and Computer Graphics. 2011. [\[pdf\]](#)

A New QEM for Parameterization of Raster Images

Yin, Femiani, Wonka, Razdan
 Computer Graphics Forum. 2011. [\[pdf\]](#)

2010

**Multi-Stage Dantzig Selector**

Ji Liu, Peter Wonka, Jieping Ye
 NIPS. 2010. [\[pdf\]](#)

Editing Operations for Irregular Vertices in Triangle Meshes

Yuanyuan Li, Eugene Zhang, Yoshihiro Kobayashi, Peter Wonka
 ACM Transactions on Graphics (Proceedings of Siggraph Asia). 2010.

[\[pdf\]](#) [\[additional materials\]](#) [\[video\]](#) [\(youtube\)](#)

Route Visualization using Detail Lenses

Pushpak Kartnik, David Cline, Stefan Jeschke, Anshuman Razdan, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics, volume 16. number 2. pages 235 – 247. 2010.

[\[pdf\]](#)

Grammar-based Encoding of Facades

Simon Haegler, Peter Wonka, Stefan Mueller Arisona, Luc Van Gool, Pascal Mueller
Computer Graphics Forum, volume 29, number 4, pages 1479 - 1487. 2010
(Proceedings of Eurographics Symposium on Rendering 2010)

[\[pdf\]](#) [\[video\]](#) [\(youtube\)](#)

Color to Gray Conversion Using ISOMAP

Ming Cui, Jiuxiang Hu, Anshuman Razdan, Peter Wonka
The Visual Computer, volume 26. number 11. pages 1349 – 1360. 2010.

[\[pdf\]](#) [\[additional materials\]](#)

2009



Adaptive Global Visibility Sampling

Jiri Bittner, Oliver Mattausch, Peter Wonka, Vlastimil Havran, Michael Wimmer
ACM Transactions on Graphics. volume 28, number 3, article # 94, pages 1-10. 2009.
(Proceedings of SIGGRAPH 2009)

[\[video\]](#) [\(youtube\)](#) [\[pdf\]](#)

Rendering Surface Details with Diffusion Curves

Stefan Jeschke, David Cline, Peter Wonka
ACM Transactions on Graphics. 2009.
(Proceedings of SIGGRAPH ASIA 2009)

[\[video\]](#) [\(youtube\)](#) [\[pdf\]](#) [\(preprint\)](#)

A GPU Laplacian Solver for Diffusion Curves and Poisson Image Editing

Stefan Jeschke, David Cline, Peter Wonka
ACM Transactions on Graphics. 2009.
(Proceedings of SIGGRAPH ASIA 2009)

[\[video\]](#) [\(youtube\)](#) [\[pdf\]](#) [\[code\]](#)

Tensor Completion for Estimating Missing Values in Visual Data

Ji Liu, Przemyslaw Musialski, Peter Wonka, Jieping Ye
ICCV. 2009.

[\[video\]](#) [\(youtube\)](#) [\[pdf\]](#) [\(preprint\)](#) [\[code and results\]](#) (matlab code, examples from the video, see readme file for details)

Interactive Hyperspectral Image Visualization Using Convex Optimization

Ming Cui, Anshuman Razdan Jiuxiang Hu, Peter Wonka
IEEE Transactions on Geoscience and Remote Sensing. volume 47. number 6. pages 1673-1684. 2009.

[\[pdf\]](#) [\(preprint\)](#)

Compressed Façade Displacement Mapping

Saif Ali, Jieping Ye, Anshuman Razdan, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics, volume 15, number 2, 2009.

[\[pdf\]](#) [\[video\]](#) [\(youtube\)](#) - has some recompression problems

Interactive Geometric Simulation of 4D Cities

Basil Weber, Pascal Mueller, Peter Wonka, Markus Gross
Computer Graphics Forum (Proceedings of Eurographics). 2009.

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Dart throwing on surfaces

David Cline, Stefan Jeschke, Anshuman Razdan, Kenric White, Peter Wonka
Computer Graphics Forum (Proceedings of Eurographics Symposium on Rendering). 2009.

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GPU Rendering of Relief Mapped Concave Frusta

Deepali Bhagvat, Stefan Jeschke, David Cline, Peter Wonka
Computer Graphics Forum. 2009. [\[video\]](#) [\(youtube\)](#) [\[pdf\]](#) [\(preprint\)](#)

A Shape Grammar for Developing Glyph-based Visualizations

P. Karnick, S. Jeschke, D. Cline, A. Razdan, E. Wentz, P. Wonka

Computer Graphics Forum. 2009. [\[video\]](#) (youtube) [\[pdf\]](#)

A Comparison of Tabular PDF Inversion Methods.

David Cline, Anshuman Razdan, Peter Wonka.

Computer Graphics Forum. 2009. [\[pdf\]](#)

Modeling the Appearance and Behavior of Urban Spaces

Carlos A. Vanegas, Daniel G. Aliaga, Peter Wonka, Pascal Müller, Paul Waddell, Benjamin Watson

Computer Graphics Forum. 2009. [\[pdf\]](#)

Curve Matching for Open 2D Curves

Ming Cui, John C Femiani, Jiuxiang Hu, Peter Wonka, Anshuman Razdan

Pattern Recognition Letters. volume 30. number 1. pages 1-10. 2009. [\[pdf\]](#)

Generating 3D Building Models from Architectural Drawings: A Survey

Xuetao Yin, Peter Wonka, Anshuman Razdan

IEEE Computer Graphics and Applications, volume 29, number 1, 2009.

[\[pdf\]](#) (IEEE copyright)

Symmetry-Based Facade Repair

Przemyslaw Musialski, Peter Wonka, Meinrad Recheis, Stefan Maierhofer, Werner Purgathofer

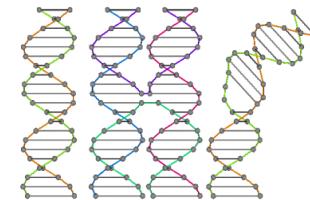
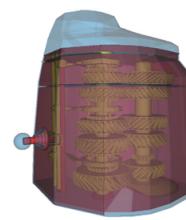
Vision, Modeling, and Visualization. 2009. [\[pdf\]](#)

Parallel Generation of L-Systems

Markus Lipp, Peter Wonka, Michael Wimmer

Vision, Modeling, and Visualization. 2009. [\[pdf\]](#)

2008



Interactive Procedural Street Modeling

Guoning Chen, Gregory Esch, Peter Wonka, Pascal Müller, Eugene Zhang

ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH). 2008. [\[pdf\]](#) [\[video\]](#) (youtube)

Interactive Visual Editing of Grammars for Procedural Architecture

Markus Lipp, Peter Wonka, Michael Wimmer

ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH). 2008. [\[pdf\]](#)

Visibility-driven Mesh Analysis and Visualization through Graph Cuts

Kaichi Zhou, Eugene Zhang, Jiri Bittner, Peter Wonka

IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Visualization). 2008. [\[pdf\]](#) [\[additional materials\]](#)

Procedural Urban Modeling in Practice

Benjamin Watson, Pascal Müller, Peter Wonka, Chris Sexton, Oleg Veryovka, Andy Fuller

IEEE Computer Graphics and Applications. 2008. [\[pdf\]](#)

Tiamat: A Three-Dimensional Editing Tool for Complex DNA Structures

Sean Williams, Kyle Lund, Chenxiang Lin, Peter Wonka, Stuart Lindsay, Hao Yan.

DNA Computing. 2008. [\[pdf\]](#)

2007

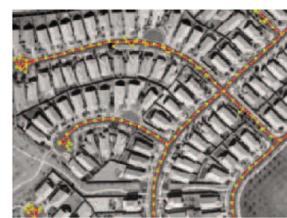


Image-based Procedural Modeling of Facades

Pascal Mueller, Gang Zeng, Peter Wonka, Luc Van Gool

ACM Transactions on Graphics (Proceedings of SIGGRAPH). 2007. [\[pdf\]](#) [\[project page\]](#)

Road Network Extraction and Intersection Detection from Aerial Images by Tracking Road Footprints

Jiuxiang Hu, Anshuman Razdan, John Femiani, Ming Cui, Peter Wonka

IEEE Transactions on Geoscience and Remote Sensing. 2007. [\[pdf\]](#)

A New Image Registration Scheme Based on Curvature Scale Space Curve Matching

Ming Cui, Peter Wonka, Jiuxiang Hu, Anshuman Razdan

The Visual Computer. 2007. [\[pdf\]](#)

Fourier Shape Descriptors of Pixel Footprints For Road Extraction From Satellite Images

Jiuxiang Hu, Anshuman Razdan, John Femiani, Ming Cui, Peter Wonka

IEEE International Conference on Image Processing. 2007. [\[pdf\]](#)**Optimized Subdivisions for Preprocessed Visibility**

Oliver Mattausch, Jiří Bittner, Peter Wonka, Michael Wimmer

Graphics Interface. 2007. [\[pdf\]](#)**Interactive Procedural Street Modeling**

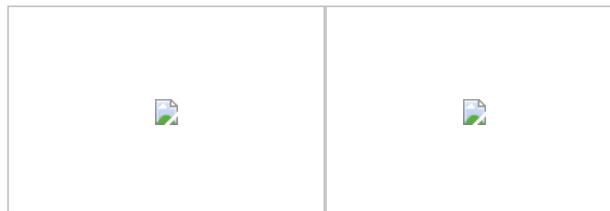
Greg Esch, Peter Wonka, Pascal Mueller, Eugene Zhang

ACM Siggraph Sketches and Applications, oral presentation, 2007. [\[pdf\]](#)**Urban Design and Procedural Modeling**

B. Watson, P. Müller, P. Wonka, A. Fuller

Course Notes of ACM SIGGRAPH. 2007. [\[pdf\]](#) - early version

2006

**Procedural 3D Reconstruction of Puuc Buildings in Xkipché**

Pascal Müller, T. Vereenooghe, Peter Wonka, I. Paap and Luc Van Gool.

Eurographics Symposium on Virtual Reality, Archaeology and Cultural Heritage (VAST). 2006. [\[pdf\]](#)

(Won best papers award - 2nd place)

Procedural Modeling of Buildings

Pascal Mueller, Peter Wonka, Simon Haegler, Andreas Ulmer, Luc Van Gool.

ACM Transactions on Graphics (Proceedings of SIGGRAPH). 2006. [\[pdf\]](#)**Guided Visibility Sampling**

Peter Wonka, Michael Wimmer, Kaichi Zhou, Stefan Maierhofer, Gerd Hesina, Alexander Reshetov.

ACM Transactions on Graphics (Proceedings of SIGGRAPH). 2006. [\[pdf\]](#)**Punctuated simplification of man-made objects**

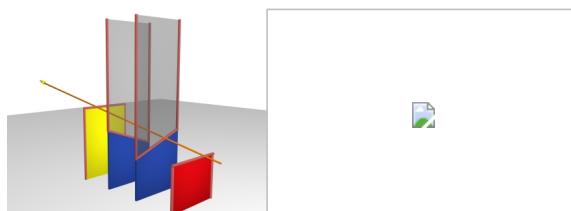
Justin Jang, Peter Wonka, William Ribarsky, Christopher D. Shaw

The Visual Computer. 2006. [\[pdf\]](#)**Procedural Modeling of Urban Environments**

P. Wonka, E. Hanson, P. Müller, B. Watson

Course Notes of ACM SIGGRAPH. 2006.

2005

**Fast Exact From-Region Visibility in Urban Scenes**

J.Bittner, P. Wonka, M. Wimmer

Eurographics Symposium on Rendering. 2005. [\[pdf\]](#)**Point Sampling with Uniformly Distributed Lines**

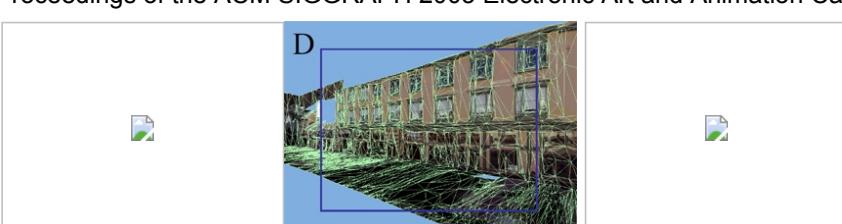
J. Rovira, P. Wonka, F. Castro, M. Sbert

Eurographics Symposium on Point-Based Graphics. 2005. [\[pdf\]](#)**Transformations in Architectural Design**

P. Müller, S. Haegler, P. Wonka and L. Van Gool

Proceedings of the ACM SIGGRAPH 2005 Electronic Art and Animation Catalog. 2005. [\[pdf\]](#)

2003



Appearance-Preserving View-Dependent Visualization
 Justin Jang William Ribarsky, Chris Shaw, and Peter Wonka
 IEEE Visualization. 2003. [\[pdf\]](#)

Rendering Time Estimation for Real-Time Rendering
 Michael Wimmer, Peter Wonka
 Rendering Techniques 2003 (Proceedings of the Eurographics Symposium on Rendering 2003). 2003. [\[pdf\]](#)

Instant Architecture
 Peter Wonka, Michael Wimmer, Francois Sillion, William Ribarsky
 ACM Transactions on Graphics (Proceedings of SIGGRAPH). 2003. [\[pdf\]](#)

Visibility in Computer Graphics
 Jiri Bittner, Peter Wonka
 Journal of Environment and Planning B: Planning and Design. 2003. [\[pdf\]](#) (technical report version)

2001



Visibility Preprocessing for Urban Scenes using Line Space Subdivision
 Jiri Bittner, Peter Wonka, Michael Wimmer
 Pacific Graphics. 2001. [\[pdf\]](#)

Instant Visibility
 Peter Wonka, Michael Wimmer, Francois Sillion
 Computer Graphics Forum (Proceedings of Eurographics). 2001. [\[pdf\]](#)
Günther Enderle Award for the best paper at Eurographics 2001

Point-Based Impostors for Real-Time Visualization
 Michael Wimmer, Peter Wonka, Francois Sillion
 Rendering Techniques 2001 (Proceedings of the Eurographics Workshop on Rendering 2001). 2001. [\[pdf\]](#)

2000

Visibility Preprocessing with Occluder Fusion for Urban Walkthroughs
 Peter Wonka, Michael Wimmer, Dieter Schmalstieg
 Rendering Techniques 2000 (Proceedings of the Eurographics Workshop on Rendering 2000). 2000. [\[pdf\]](#)

1999

Occluder Shadows for Fast Walkthroughs of Urban Environments
 Peter Wonka, Dieter Schmalstieg
 Computer Graphics Forum (Proceedings of Eurographics). 1999. [\[pdf\]](#)

1998

Raytracing of Nonlinear Fractals
 Peter Wonka, Michael Gervautz
 WSCG Plzen Proceedings. 1998. [\[pdf\]](#)

Other Publications

Modellierung und Rendering mit nichtlinearen CSG-pL-systemen
 Peter Wonka (Diploma Thesis)
 Institute of Computer Graphics, Vienna University of Technology 1997

Occlusion Culling for Real-Time Rendering of Urban Environments
 Peter Wonka. (PhD Thesis)
 Institute of Computer Graphics, Vienna University of Technology 2001 [\[pdf\]](#)

Digitale Bausteine zur Fassadenmodellierung
 Peter Wonka (Diploma Thesis)
 Institute for local planning, Vienna University of Technology 2002

