# Themenliste für das Seminar Computergrafik, Wintersemester 2014/15

## *3D object reconstruction and rendering*

**1.**
**Spatial data structures for accelerated 3D visibility computation to enable large model visualization on the web**
Christian Stein, Max Limper, Arjan Kuijper
Proceedings of the Nineteenth International ACM Conference on 3D Web Technologies (WEB3D2014). ACM, 2014, pp. 53-61.
http://dl.acm.org/citation.cfm?id=2628600
http://delivery.acm.org/10.1145/2630000/2628600/p53-stein.pdf?ip=134.76.192.145&id=2628600&acc=ACTIVE%20SERVICE&key=2BA2C432AB83DA15%2E8C14E74AF280C121%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35&CFID=439402070&CFTOKEN=23351634&__acm__=1412854662_213069af160216af5d8bf7c557ed1b6b

**2.**
**Scalable real-time volumetric surface reconstruction**
Jiawen Chen, Dennis Bautembach, Shahram Izadi
*ACM Transactions on Graphics*, 32 (4), Article 113 (July 2013), 10 p.
http://dl.acm.org/citation.cfm?doid=2461912.2461940
http://delivery.acm.org/10.1145/2470000/2461940/a113-chen.pdf?ip=134.76.192.145&id=2461940&acc=ACTIVE%20SERVICE&key=2BA2C432AB83DA15%2E8C14E74AF280C121%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35&CFID=439402070&CFTOKEN=23351634&__acm__=1412854956_d3469e6433062825342917b0d5962404

## *Modelling of objects (general)*

**3.**
**Partition of Unity Parametrics: A framework for meta-modeling**
Adam Runions, Faramarz Samavati
*The Visual Computer* 27 (2011) (6-8), pp. 495-505.
http://algorithmicbotany.org/papers/pup.tvc2011.pdf

**4.**
**A probabilistic model for component-based shape synthesis**
Evangelos Kalogerakis, Siddhartha Chaudhuri, Daphne Koller, Vladlen Koltun
*ACM Transactions on Graphics* (TOG), Volume 31, Issue 4 (July 2012), Article No. 55
http://dl.acm.org/citation.cfm?id=2185551
http://vladlen.info/publications/a-probabilistic-model-for-component-based-shape-synthesis/

*Light regime modelling*

**5.**
**An analytic model for full spectral sky-dome radiance**
Lukas Hosek, Alexander Wilkie
*ACM Transactions on Graphics* (TOG), Volume 31, Issue 4 (July 2012), Article No. 95
http://dl.acm.org/citation.cfm?id=2185591
http://cgg.mff.cuni.cz/projects/SkylightModelling/

**6.**
**Adding a solar-radiance function to the Hošek-Wilkie skylight model**
Lukas Hosek, Alexander Wilkie
*IEEE Computer Graphics and Applications*, Vol. 33, Issue 3 (May-June 2013), pp. 44-52
Paper: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=6459496
Paper webpage: http://cgg.mff.cuni.cz/projects/SkylightModelling/

**7.**
**Predicting sky dome appearance on earth-like extrasolar worlds**
Alexander Wilkie, Lukas Hosek
Proceedings of the 29th Spring Conference on Computer Graphics (SCCG 2013), 2013
Paper: http://cgg.mff.cuni.cz/projects/SkylightModelling/sccg_2013_alien_sun_preprint.pdf
Paper webpage: http://cgg.mff.cuni.cz/projects/SkylightModelling/

*Collision detection and avoidance*

**8.**
**I-COLLIDE: An interactive and exact collision detection system for large-scale environments**
Jonathan D. Cohen, Ming C. Lin, Dinesh Manocha, Madhav Ponamgi
Proceedings of the 1995 Symposium on Interactive 3D graphics (I3D '95) (1995), pp. 189-218
Paper: http://dl.acm.org/citation.cfm?id=199437

**9.**
**Modeling collision avoidance behavior for virtual humans**
Stephen J. Guy, Ming Lin, Dinesh Manocha
Proceedings of the 9th International Conference on Autonomous Agents and Multiagent Systems: volume 2 (AAMAS '10) (2010), pp. 575-582
Paper: http://dl.acm.org/citation.cfm?id=1838182
Paper webpage: http://gamma.cs.unc.edu/RCAP/

*Modelling of vegetation*

**10.**
**Interactive authoring of simulation-ready plants**
Yili Zhao, Jernej Barbič
*ACM Transactions on Graphics* (TOG), Volume 32, Issue 4 (July 2013), Article No. 84
Paper: http://dl.acm.org/citation.cfm?id=2461961&picked=formats
Paper webpage: http://run.usc.edu/botanical/

**11.**
**Modeling and generating moving trees from video**
Chuan Li, Oliver Deussen, Yizhe Song, Phil Willis, Peter Hall
*ACM Transactions on Graphics* (TOG), Volume 30, Issue 6 (December 2011), Article No. 127
http://dl.acm.org/citation.cfm?id=2024161
http://www.cs.bath.ac.uk/~cl249/

**12.**
**A plastic, dynamic and reducible 3D geometric model for simulating gramineous leaves**
Christian Fournier, Christophe Pradal
International Symposium on Plant Growth Modeling, Simulation, Visualization and Applications, 2012, pp. 125-132
http://hal.archives-ouvertes.fr/docs/00/78/81/40/PDF/leafshape.pdf

**13.**
**Real-time realistic rendering and lighting of forests**
Eric Bruneton, Fabrice Neyret
*Computer Graphics Forum*, Volume 31, Issue 2, pt 1 (May 2012), pp. 373-382
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8659.2012.03016.x/abstract
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8659.2012.03016.x/pdf

*Modelling of special objects (non-vegetation)*

**14.**
**On-the-fly generation and rendering of infinite cities on the GPU**
Markus Steinberger, Michael Kenzel, Bernhard Kainz, Peter Wonka, Dieter Schmalstieg
Proceedings of EUROGRAPHICS 2014 (Eds.: B. Lévy, J. Kautz)
*Computer Graphics Forum*, 33 (2) (2014), 105-114
http://onlinelibrary.wiley.com/doi/10.1111/cgf.12315/abstract
http://onlinelibrary.wiley.com/doi/10.1111/cgf.12315/pdf

**15.**
**Introducing GAMER: A fast and accurate method for ray-tracing galaxies using procedural noise.**
N. E. Groeneboom, H. Dahle
*The Astrophysical Journal*, 783, Art. 138 (March 2014), 10 pp.
http://iopscience.iop.org/0004-637X/783/2/138/
http://iopscience.iop.org/0004-637X/783/2/138/pdf/0004-637X_783_2_138.pdf

*Texturing, rendering and rasterization (general)*

**16.**
**CG2Real: Improving the realism of computer generated images using a large collection of photographs**
Micah K. Johnson, Kevin Dale, Shai Avidan, Hanspeter Pfister, William T. Freeman, Wojciech Matusik
*IEEE Transactions on Visualization and Computer Graphics*, Volume 17, Issue 9 (September 2011), pp. 1273-1285
Paper:
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=5620893&sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A5946031%29
http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5620893
Paper webpage: http://people.csail.mit.edu/wojciech/CG2Real/index.html

**17.**
**Wavelet rasterization**
J. Manson, S. Schaefer
*Computer Graphics Forum*, Volume 30, Issue 2 (April 2011), pp. 395-404
http://josiahmanson.com/research/wavelet_rasterization/
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8659.2011.01887.x/full

*Level of Detail (LOD) methods*

**18.**
**Foliage simplification based on multi-viewpoints for efficient rendering**
Sulan Zhang
*Journal of Software*, 9 (7) (July 2014), 1655-1665
http://www.ojs.academypublisher.com/index.php/jsw/article/download/jsw090716551665/9613

**19.**
**C-LOD: Context-aware material level-of-detail applied to mobile graphics**
G. A. Koulieris, G. Drettakis, D. Cunningham, K. Mania
*Computer Graphics Forum*, 33 (4) (2014), 41-49.
http://onlinelibrary.wiley.com/doi/10.1111/cgf.12411/abstract
http://onlinelibrary.wiley.com/doi/10.1111/cgf.12411/pdf