

Publication List

EMIL SAUCAN

2010

1. Emil Saucan, *Geometric Sampling of Infinite Dimensional Signals*, submitted.
2. Emil Saucan, *Curvature based triangulation of metric measure spaces*, submitted (arXiv:1002.0007v1 [math.DG]).
3. Emil Saucan, *Quasi-conformal Mapping for Medical Imaging - Some New Directions*, accepted at ICMB2010.
4. Emil Saucan, *Isometric Embeddings in Imaging and Vision: Facts and Fiction*, submitted (arXiv:1004.5351v2 [cs.CV]).
5. Eli Appleboim, Emil Saucan, Gershon Wolansky and Yehoshua Y. Zeevi *Generalized Laplacians and Curvatures for Image Analysis and Processing*, preprint.

2009

1. Emil Saucan and Meir Katchalski, *The existence of thick triangulations – an “elementary” proof*, *The Open Mathematics Journal*, **2**, 8-11, 2009.
2. Emil Saucan, *Intrinsic Differential Geometry and the Existence of Quasimeromorphic Mappings*, *Revue Roumaine de Math. Pures et Appl.*, **54** (2009), 5-6, 565-574.
3. Emil Saucan and Eli Appleboim, *Metric Methods in Surface Triangulation*, *Proceedings of IMA Conference “Mathematics of Surfaces XIII”*, *Lecture Notes in Computer Science*, **5654**, 335-355.

4. Emil Saucan, Eli Appleboim, Gershon Wolansky and Yehoshua Y. Zeevi, *Combinatorial Ricci Curvature and Laplacians for Image Processing*, Proceedings of CISP'09, Vol. 2, 992-997.
5. Emil Saucan, Eli Appleboim and Yehoshua Y. Zeevi, *Geometric Sampling of Images, Vector Quantization and Zador's Theorem*, to appear in Proceedings of SampTA 2009.
6. Emil Saucan, Chen Sagiv and Eli Appleboim, *Geometric Wavelets for Image Processing: Metric Curvature of Wavelets*, to appear in Proceedings of SampTA 2009.
7. Eli Appleboim, Emil Saucan and Yehoshua Y. Zeevi, *Geometric Reproducing Kernels for Signal Reconstruction*, to appear in Proceedings of SampTA 2009.
8. Eli Appleboim, Emil Saucan and Jonathan Stern, *Normal Approximations of Geodesics on Smooth Triangulated Surfaces*, CCIT Report #722, August 2009.
9. Eli Appleboim, Emil Saucan and Yehoshua Y. Zeevi, *Geometric Image Sampling, Reconstruction and Quantization*, preprint.

2008

1. Emil Saucan, Eli Appleboim and Yehoshua Y. Zeevi, *Sampling and Reconstruction of Surfaces and Higher Dimensional Manifolds*, Journal of Mathematical Imaging and Vision, **30**(1), 2008, 105-123.
2. Emil Saucan, *Remarks on the The Existence of Quasimeromorphic Mappings*, AMS Contemporary Mathematics CONM/455, 2008, 325-331.

3. Emil Saucan, Eli Appleboim, Efrat Barak-Shimron, Ronen Lev and Yehoshua Y. Zeevi, *Local versus Global in Quasiconformal Mapping for Medical Imaging*, *Journal of Mathematical Imaging and Vision*, **32**(3), 293-311, 2008.
4. Eli Appleboim, Emil Saucan and Yehoshua Y. Zeevi, *Geometric Sampling for Signals with Applications to Images*, *SampTA 07 – Sampling Theory and Applications*, 1-6, 2008.
5. Emil Saucan, Eli Appleboim, Gershon Wolansky and Yehoshua Y. Zeevi, *Combinatorial Ricci Curvature for Image Processing*, *MICCAI 2008 Workshop “Manifolds in Medical Imaging: Metrics, Learning and Beyond”*, *Midas Journal* (electronic journal – <http://hdl.handle.net/10380/1500>).
6. Emil Saucan, Eli Appleboim, Dirk A. Lorenz and Yehoshua Y. Zeevi, *On the classical – and not so classical – Shannon Sampling Theorem*, *Technion CCIT Report #680* (EE Pub. #1637 January 2008).
7. Emil Saucan, Eli Appleboim and Yehoshua Y. Zeevi, *Geometric Approach to Sampling and Communication*, *Technion CCIT Report #707* (EE Pub. # 1664 November 2008), (see also arXiv:1002.2959v1).

2007

1. Emil Saucan, Eli Appleboim and Yehoshua Y. Zeevi, *Image Projection and Representation on S^n* , *Journal of Fourier Analysis and Applications*, Special Issue – “Analysis on the Sphere II” **13**(6), 2007, 711-727.
2. Ronen Lev, Emil Saucan and Gershon Elber, *Curvature Estimation over Smooth Polygonal Meshes using The Half Tube Formula*, *Lecture Notes in Computer Science, Mathematics of Surfaces: 12th IMA International Conference*, **4647**, pp. 275-289, Springer-Verlag, 2007.

3. Emil Saucan, Eli Appleboim and Yehoshua Y. Zeevi, *Geometric Sampling of Manifolds for Image Representation and Processing*, SSVM 2007, Lecture Notes in Computer Science, **4485**, pp. 907-918, Springer-Verlag, 2007.
4. Eli Appleboim, Emil Saucan and Yehoshua Y. Zeevi, *Sparse sampling of manifolds*, preprint.

2006

1. Emil Saucan, *The Existence of Quasimeromorphic Mappings in Dimension 3*, Conform. Geom. Dyn. **10** (2006), 21-40.
2. Emil Saucan, *The Existence of Quasimeromorphic Mappings*, Annales Academiæ Scientiarum Fennicæ Mathematica, Vol. 31, 2006, 131-142.
3. Emil Saucan, *The Existence of Automorphic Quasimeromorphic Mappings and a Related Problem*, Revue Roumaine de Math. Pures et Appl., vol 51, no. 5-6, 2006, 759-766.
4. Emil Saucan, *Curvature – Smooth, Piecewise-Linear and Metric*, book chapter, in *What is Geometry?*, Advanced Studies in Mathematics and Logic, 237-268, Polimetrica, Milano, 2006.
5. Eli Appleboim, Emil Saucan and Yehoshua Y. Zeevi, *Minimal-Distortion Mappings of Surfaces for Medical Imaging*, with Eli Appleboim and Yehoshua Y. Zeevi, Proceedings of VISAPP 2006 – International Conference on Computer Vision Theory and Applications, Setubal, Portugal, 25 - 28 February, 2006.

6. Eli Appleboim, Emil Saucan, Yehoshua Y. Zeevi and Ofir Zeitoun, *Quasi-Isometric and Quasi-Conformal Development of Triangulated Surfaces for Computerized Tomography*, Lecture Notes in Computer Science, IWCI 2006 **4040**, pp. 361-374, Springer-Verlag, 2006.
7. Emil Saucan, Eli Appleboim, and Yehoshua Y. Zeevi, *Two-Dimensional Sampling and Representation of Folded Surfaces Embedded in Higher Dimensional Manifolds*, Proceedings of EUSIPCO 2006 – European Signal Processing Conference, Florence.
8. Eli Appleboim, Emil Saucan, and Yehoshua Y. Zeevi, *Quasi-Conformal Flat Representation of Triangulated Surfaces for Computerized Tomography*, with Eli Appleboim and Yehoshua Y. Zeevi, CVAMIA 2006, Gratz, Austria, Lecture Notes in Computer Science, CVAMIA 2006, **4241**, 155-165.
9. Emil Saucan and Eli Appleboim, *Digital Version of Green's Theorem and its Application to the Coverage Problem in Formal Verification*, Stud.Cercet.Stiint., Ser.Mat., 16 (2006), Supplement Proceedings of ICMI 45, Bacau, Sept.18-20, 2006, 539-554.

2005

1. Emil Saucan, *Note on a Theorem of Munkres*, Mediterranean Journal of Mathematics, vol. 2, no. 2 (2005), 215-229.
2. Emil Saucan, *Euler's Theorem as the Path Towards Mathematics*, Nexus Network Journal – Special issue dedicated to didactics (Teaching Mathematics to Architects), vol. 7, no. 1, pp. 111-119 (Spring 2005).

3. Emil Saucan and Eli Appleboim, *Curvature Based Clustering for DNA Microarray Data Analysis*, Lecture Notes in Computer Science, IbPRIA 2005, **3523**, pp. 405-412, Springer-Verlag, 2005.
4. Emil Saucan, *A Place for Differential Geometry?*, Proceedings of The 4th International Colloquium on the Didactics of Mathematics, Vol II, pp. 267-276, 2005.

2004

1. Emil Saucan, *Surface triangulation - the metric approach*, preprint (arxiv:cs.GR/0401023).
2. Peter Soreanu and Emil Saucan, *Instructor Immediacy in Synchronous e-Learning Environments*, Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2004 pp. 3001-3005. Norfolk, VA: AACE.

2003

1. Peter Soreanu and Emil Saucan, *Semi-Continuous Monitoring of Student Feedback in Interactive Synchronous E-Learning Environments*, Proceedings of Third IEEE International Conference on Advanced Learning Technologies (ICALT'03), p. 276-277, 2003.

Before 2003

1. Emil Saucan, *Exercises and Problems in Complex Functions Theory* (in Hebrew), 163 pages, Technion, Haifa. (<http://www.math.technion.ac.il/courses> – look for Course Number 104215 – Complex Functions.)

2. Emil Saucan and Dan Guralnik, *A Problem Book in Topology*, (in Hebrew), 225 pages, Technion, Israel. (<http://www.math.technion.ac.il/courses> – look for Course Number 104142 – Introduction to Topology.)