List of Publications

Steve Y. Oudot

Bibliometrics. I provide the bibliometric data pertaining to my publications in the following tables. For journals I have collected the data from the ERA 2010 ranking. The flagship journal in our field is *Discrete & Computational Geometry*, while the second best one (and still very high quality) is *Computational Geometry: Theory and Applications*. I have also occasionly published in various Math or CS theory journals, depending on the audience I wanted to reach. One thing that struck me when collecting the data was the rank C awarded to *Graphical Models*, which used to have the reputation of a top-tier journal in geometric modelling when I published my first article.

Journal name	ERA Rank	Impact Factor	# articles
Journal of the ACM	A*	2.353	1
Foundations of Computational Mathematics	A	1.918	2
Discrete & Computational Geometry	A	0.649	3
Transactions on Algorithms	A	0.54	1
Pattern Recognition Letters	B	1.586	1
Computer Graphics Forum	B	1.638	2
Computational Geometry: Theory and Applications	B	0.641	3
Geometriae Dedicata	B	0.465	1
Graphical Models	C	0.697	1
Engineering with Computers	N/A	0.6	1
Comptes Rendus Académie des Sciences — Physique	N/A	1.818	1

For conferences I have collected the data from the CORE conference portal. The flagship conference in our field is the *Symposium on Computational Geometry*. Acceptance rates of CS theory conferences are consistently high compared to other areas. This is because there is a lot of inhibition among authors, which makes the average quality of the submissions very high. Another venue of interest to our community, at the interface between computational geometry and computer graphics, is the *Eurographics Symposium on Geometry processing*, which is considered as a very good conference despite its rank B. As is often the case in computer graphics, the proceedings have been published as special issues of the journal *Computer Graphics Forum* since 2008.

Conference name	CORE Rank	Acceptance Rate (avg)	# articles
International Conference on Machine Learning	A*	27%	1
ACM-SIAM Symposium on Discrete Algorithms	A*	30%	5
Symposium on Computational Geometry	A	30%	11
Eurographics Symposium on Geometry Processing	B	35%	3
ACM Symposium on Solid and Physical Modelling	B	45%	1
International Meshing Roundtable	N/A	N/A	1
Geometric Science of Information	N/A	N/A	1
Computational Topology in Image Context	N/A	N/A	1

Regarding my contribution to each of these articles: it is customary in our field to list the authors' names in alphabetical order, therefore I have marked my name with a * whenever I was the main author and with a † whenever I was the main advisor. According to Google Scholar, my h-index as of Feb. 2017 is 18 while my i10-index is 25, with a total number of citations around 1700.

Books

[1] F. Chazal, V. de Silva, M. Glisse, and S. Oudot. *The structure and stability of persistence modules*. Springer Briefs in Mathematics. 2016.

[2] S. Y. Oudot. *Persistence Theory: From Quiver Representations to Data Analysis*. AMS Mathematical Surveys and Monographs 209. 218 pp. American Mathematical Society, 2015.

International journals with review

[3] T. Bonis and S. Oudot[†]. "A fuzzy clustering algorithm for the mode-seeking framework". In: *Pattern Recognition Letters* 102 (2018), pp. 37–43.

[4] J.-D. Boissonnat, R. Dyer, A. Ghosh, and S. Oudot. "*Only distances* are required to reconstruct submanifolds". In: *Computational Geometry: Theory and Applications* (2017). To appear.

[5] M. Carrière and S. Oudot[†]. "Structure and Stability of the 1-Dimensional Mapper". In: *Foundations of Computational Mathematics* (2017), pp. 1–64.

[6] M. Buchet, F. Chazal, S. Oudot[†], and D. Sheehy. "Efficient and Robust Persistent Homology for Measures". In: *Computational Geometry: Theory and Applications* 58 (2016), pp. 70–96.

[7] M. Carrière, S. Y. Oudot[†], and M. Ovsjanikov. "Stable Topological Signatures for Points on 3D Shapes". In: *Computer Graphics Forum (proc. SGP 2015)*. 2015.

[8] S. Oudot[†] and D. Sheehy. "Zigzag Zoology: Rips Zigzags for Homology Inference". In: *Foundations of Computational Mathematics* (2014), pp. 1–36.

[9] F. Chazal, V. de Silva, and S. Oudot. "Persistence stability for geometric complexes". In: *Geometriae Dedicata* (2013), pp. 1–22.

[10] F. Chazal, L. J. Guibas, S. Oudot[†], and P. Skraba. "Persistence-Based Clustering in Riemannian Manifolds". In: *Journal of the ACM* 60.6 (Nov. 2013), 41:1–41:38.

[11] F. Chazal, L. J. Guibas, S. Oudot[†], and P. Skraba. "Analysis of Scalar Fields over Point Cloud Data". In: *Discrete and Computational Geometry* 46.4 (Dec. 2011), pp. 743–775.

[12] J. Gao, L. J. Guibas, S. Oudot[*], and Y. Wang. "Geodesic Delaunay Triangulation and Witness Complex in the Plane". In: *Transactions on Algorithms* 6.4 (2010), pp. 1–67.

[13] S. Oudot, L. Rineau, and M. Yvinec. "Meshing Volumes with Curved Boundaries". In: *Engineering with Computers* 26.3 (2010), pp. 265–279.

[14] J.-D. Boissonnat, L. J. Guibas, and S. Oudot[*]. "Manifold Reconstruction in Arbitrary Dimensions using Witness Complexes". In: *Discrete and Computational Geometry* 42.1 (2009), pp. 37–70.

[15] F. Chazal, D. Cohen-Steiner, L. J. Guibas, F. Mémoli, and S. Oudot[*]. "Gromov-Hausdorff Stable Signatures for Shapes using Persistence". In: *Computer Graphics Forum (proc. SGP 2009)* (2009), pp. 1393–1403.

[16] L. J. Guibas and S. Oudot[*]. "Reconstruction Using Witness Complexes". In: *Discrete and Computational Geometry* 40.3 (2008), pp. 325–356.

[17] J.-D. Boissonnat, L. J. Guibas, and S. Oudot[*]. "Learning Smooth Shapes by Probing". In: *Computational Geometry: Theory and Applications* 37 (2007), pp. 38–58.

[18] G. Scarella, O. Clatz, S. Lanteri, G. Beaume, S. Oudot, J.-P. Pons, S. Piperno, P. Joly, and J. Wiart. "Realistic numerical modelling of human head tissue exposure to electromagnetic waves from cellular phones". In: *Comptes Rendus de l'Académie des Sciences — Physique* 7.5 (June 2006), pp. 501–508.

[19] J.-D. Boissonnat and S. Oudot[*]. "Provably good sampling and meshing of surfaces". In: *Graphical Models* 67.5 (Sept. 2005), pp. 405–451.

International conferences with review

[20] M. Carrière, M. Cuturi, and S. Oudot[†]. "Sliced Wasserstein Kernel for Persistence Diagrams". In: *Proceedings of the 34th International Conference on Machine Learning*. Ed. by D. Precup and Y. W. Teh. Vol. 70. Proceedings of Machine Learning Research. International Convention Centre, Sydney, Australia: PMLR, 2017, pp. 664–673.

[21] M. Carrière and S. Oudot[†]. "Local Equivalence and Intrinsic Metrics between Reeb graphs". In: *Proc. 33rd Annual Symposium on Computational Geometry (SoCG)*. 2017, 25:1–25:15.

[22] T. Bonis, F. Chazal, S. Oudot, and M. Ovsjanikov. "Topological Pooling". In: *Proc. 6th Internat. Workshop on Computational Topology in Image Context (CTIC)*. 2016.

[23] M. Carrière and S. Oudot[†]. "Structure and Stability of the 1-Dimensional Mapper". In: *Proc. 32nd Annual Symposium on Computational Geometry (SoCG)*. June 2016.

[24] M. Buchet, F. Chazal, T. Dey, F. Fan, S. Oudot, and Y. Wang. "Topological analysis of scalar fields with outliers". In: *Proc. 31st Annual Symposium on Computational Geometry (SoCG)*. June 2015.

[25] M. Buchet, F. Chazal, S. Oudot[†], and D. Sheehy. "Efficient and Robust Persistent Homology for Measures". In: *Proc. ACM-SIAM Symposium on Discrete Algorithms (SODA)*. Jan. 2015, pp. 168–180.

[26] C. Maria and S. Oudot[†]. "Zigzag Persistence via Reflections and Transpositions". In: *Proc. ACM-SIAM Symposium on Discrete Algorithms (SODA)*. Jan. 2015, pp. 181–199.

[27] F. Chazal and S. Oudot[*]. "Interleaved Filtrations: Theory and Applications in Point Cloud Data Analysis". In: *Proc. Geometric Science of Information (GSI)*. Vol. 8085. Lecture Notes in Computer Science. Springer, 2013, pp. 587–592.

[28] S. Oudot[†] and D. R. Sheehy. "Zigzag Zoology: Rips Zigzags for Homology Inference". In: *Proc. 29th Annual Symposium on Computational Geometry (SoCG)*. June 2013, pp. 387–396.

[29] F. Chazal, L. J. Guibas, S. Oudot[†], and P. Skraba. "Persistence-Based Clustering in Riemannian Manifolds". In: *Proc. 27th Annu. Sympos. on Comput. Geom. (SoCG)*. June 2011, pp. 97–106.

[30] B. Hudson, G. L. Miller, S. Oudot, and D. R. Sheehy. "Topological inference via meshing". In: *Proc. 26th Annual Symposium on Computational geometry (SoCG)*. ACM, 2010, pp. 277–286.

[31] F. Chazal, L. J. Guibas, S. Oudot[†], and P. Skraba. "Analysis of Scalar Fields over Point Cloud Data". In: *Proc. 19th ACM-SIAM Sympos. on Discrete Algorithms (SODA)*. 2009, pp. 1021–1030.

[32] F. Chazal, D. Cohen-Steiner, M. Glisse, L. J. Guibas, and S. Oudot[*]. "Proximity of Persistence Modules and their Diagrams". In: *Proceedings of the 25th Symposium on Computational Geometry (SoCG)*. 2009, pp. 237–246.

[33] F. Chazal and S. Oudot[*]. "Towards Persistence-Based Reconstruction in Euclidean Spaces". In: *Proceedings of the 24th Symposium on Computational Geometry (SoCG)*. 2008, pp. 232–241.

[34] J. Gao, L. J. Guibas, S. Oudot[*], and Y. Wang. "Geodesic Delaunay Triangulation and Witness Complex in the Plane". In: *Proc. 18th ACM-SIAM Sympos. on Discrete Algorithms (SODA)*. 2008, pp. 571–580.

[35] J.-D. Boissonnat, L. J. Guibas, and S. Oudot[*]. "Manifold Reconstruction in Arbitrary Dimensions using Witness Complexes". In: *Proc. 23rd Sympos. on Comput. Geom. (SoCG)*. 2007.

[36] L. J. Guibas and S. Oudot[*]. "Reconstruction Using Witness Complexes". In: *Proc. 18th ACM-SIAM Sympos. on Discrete Algorithms (SODA)*. 2007, pp. 1076–1085.

[37] J.-D. Boissonnat and S. Oudot[*]. "Provably Good Sampling and Meshing of Lipschitz Surfaces". In: *Proc. 22nd Annual Sympos. Comput. Geom. (SoCG)*. 2006, pp. 337–346.

[38] J.-D. Boissonnat, L. J. Guibas, and S. Oudot*. "Learning Smooth Objects by Probing". In: *Proc. 21st Annu. Sympos. on Computational Geometry (SoCG)*. 2005, pp. 198–207.

[39] S. Oudot, L. Rineau, and M. Yvinec. "Meshing Volumes Bounded by Smooth Surfaces". In: *Proc. 14th Internat. Meshing Roundtable*. 2005, pp. 203–220.

[40] J.-D. Boissonnat and S. Oudot*. "An effective condition for sampling surfaces with guarantees". In: *Proc. 9th ACM Sympos. on Solid and Physical Modelling (SPM)*. 2004, pp. 101–112.

[41] J. D. Boissonnat and S. Oudot*. "Provably Good Surface Sampling and Approximation". In: *Proc. 1st Symposium on Geometry Processing (SGP)*. 2003, pp. 9–18.

Posters, videos

[42] J.-D. Boissonnat, L. J. Guibas, and S. Oudot*. "Learning Smooth Objects by Probing (video)". In: *Proc. 21st Annual Symposium on Computational Geometry (SoCG)*. Pisa, Italy, 2005, pp. 364–365.

Research reports and manuscripts

[43] M. Carrière, B. Michel, and S. Oudot[†]. *Statistical Analysis and Parameter Selection for Mapper*. Research report *arXiv:1706.00204 [CS.CG]*, submitted to the *Journal of Machine Learning Research*. 2017.

[44] S. Oudot[†] and E. Solomon. *Barcode Embeddings, Persistence Distortion, and Inverse Problems for Metric Graphs*. Research report *arXiv:1712.03630 [math.AT]*. 2017.

[45] J. Cochoy and S. Oudot[†]. *Decomposition of Exact Pfd Persistence Bimodules*. Research report *arXiv:1605.09726 [Math.RT]*, submitted to *Discrete and Computational Geometry*. 2016.

[46] C. Maria and S. Oudot[†]. *Computing Zigzag Persistent Cohomology*. Research report *arXiv:1608.06039 [CS.CG]*, submitted to *SIAM Algorithm Engineering and Experiment (ALENEX)*. 2016.