Brice Loustau

Publication list

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Published articles and preprints

1. The symplectic geometry of the deformation space of complex projective structures.
Geometry & Topology 19 (2015), no. 3, 1737–1775.

2. Minimal surfaces and symplectic structures of moduli spaces.
Geometriae Dedicata 175 (2015), 309–322.

3. Bi-Lagrangian structures and Teichmüller theory (with A. Sanders).
Submitted. Preprint: arXiv:1708.09145

4. Computing discrete equivariant harmonic maps (with J. Gaster and L. Monsaingeon).
Submitted. Preprint: arXiv:1810.11932

5. Computing harmonic maps between Riemannian manifolds (with J. Gaster and L. Monsaingeon).
Submitted. Preprint: arXiv:1910.08176

6. The sum of Lagrange numbers (with J. Gaster).
Submitted. Preprint. Preprint: arXiv:2008.07659

7. Harmonic maps from Kähler manifolds.
Submitted. Preprint. Preprint: arXiv:2010.03545

Articles in preparation

8. Complex geometry of the universal Higgs moduli space (w/ A. Sanders and N. Tholozan).
We study the complex, Kähler and hyper-Kähler geometry of the universal moduli space of Higgs bundles over Teichmüller space.

9. Hyper-Kähler geometry of minimal hyperbolic germs (w/ F. Bonsante, A. Sanders, and A. Seppi).
We introduce a mixed signature hyper-Kähler metric on the Taubes moduli space, extending the hyper-Kähler metric of Donaldson off almost-Fuchsian space.

10. Symplectic geometry of Wick rotations (with C. Scarinci).
We study the symplectic properties of Wick rotations between moduli spaces of Einstein 3-manifolds in relation to bi-Lagrangian structures.

11. Discrete Bochner formula on Riemannian manifolds (with J. Gaster and L.Monsaingeon).
We establish a discrete Bochner formula for functions on a weighted triangulation taking values in Riemannian manifold.

Notes

Available at brice.loustau.eu/research.html#Notes

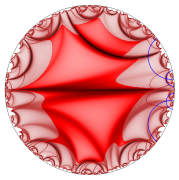
1. Higgs bundles and Hitchin components.
   Notes for the workshop *Higher Teichmüller-Thurston spaces* at Orsay, France, Fall 2012.
2. Minimal surfaces and quasi-Fuchsian structures.
   Notes for the NSF workshop *Higgs bundles and harmonic maps* in Asheville, NC, January 2015.
3. Riemann surfaces.
   Lecture notes for a Masters course at TU Darmstadt, Winter 2018-2019.

Book

Hyperbolic geometry. With 45 figures, 80 exercises, hints and solutions.
Preprint: arXiv:2003.11180.
Available at brice.loustau.eu/research.html#Book
To appear at Springer.

Mathematical software

Circle Packings (with B. Beeker)
Computes and shows circle packings and Riemann mappings.
brice.loustau.eu/circlepackingsen.html



Harmony (with J. Gaster)
Computes and shows equivariant harmonic maps.
brice.loustau.eu/software.html#harmony

Last updated: October 10, 2020