

JOÉ BRENDEL

joe@brendel.lu

Name: Joé BRENDEL

Date of birth: 4th March 1994

Address: School of Mathematical Sciences, Tel Aviv University, Ramat Aviv, Tel Aviv 69978 Israel

Website: brendel.lu

Nationality: Luxembourg

RESEARCH POSITIONS

Postdoctoral Fellow | *Tel Aviv University* 10/2022 –
Mentors: Lev Buhovsky, Yael Karshon, Yaron Ostrover, Leonid Polterovich

EDUCATION

PhD in Mathematics | *Université de Neuchâtel* 09/2017 – 08/2022
Thesis advisor : Felix Schlenk
awarded *Prix Léon Du Pasquier - Louis Perrier* for best PhD dissertation in exact sciences

MSc in Mathematics | *Université de Fribourg* 09/2016 – 07/2017
Master thesis advisor: Anand Dessai; Grade average: 5.92/6.00

BSc in Mathematics | *Université de Fribourg* 09/2013 – 07/2016
Minor in Physics (60 ECTS); Grade average: 5.82/6.00

Secondary School | *Lycée de Garçons Luxembourg* 09/2006 – 06/2013
Specialization: Mathematics and natural sciences; Grade: Excellent

PUBLICATIONS

Local exotic tori arXiv:2310.11359
submitted

Hamiltonian equivalence of toric fibres and symmetric probes arXiv:2302.00334
submitted

Pinwheels as Lagrangian barriers arXiv:2210.00280
joint with Felix Schlenk, accepted for publication in *Communications in Contemporary Mathematics*

Appendix to On certain quantifications of Gromov's non-squeezing theorem arXiv:2105.00586
by K. Sackel, A. Song, U. Varolgunes and J. J. Zhu, accepted for publication in *Geometry & Topology*

An introduction to the Chekanov torus
Expository article published in *Proceedings of the Gökova Geometry-Topology Conference 2021*

Real Lagrangian Tori and Versal Deformations arXiv:2002.03696
accepted for publication in *Journal of Symplectic Geometry*

On the topology of real Lagrangians in toric symplectic manifolds arXiv:1912.10470
joint with Joontae Kim and Jiyeon Moon, published in *Israel Journal of Mathematics*

ONGOING PROJECTS

Exotic cube embeddings (preliminary version on demand)
joint with Grigory Mikhalkin and Felix Schlenk

On Lagrangian tori in $S^2 \times S^2$ (preliminary version on demand)
joint with Joontae Kim

Semi-local exotic tori (preliminary version on demand)
joint with Johannes Hauber and Joel Schmitz

RESEARCH TALKS

Integrable systems and symplectic topology of their fibres Floris Takens seminar, Groningen, 60 minutes talk	06/2023
Local exotic tori Montréal, Princeton, Tel Aviv, and Paris Symplectic Zoominar, 60 minutes online talk	05/2023 [video link]
Lagrangian product tori in $S^2 \times S^2$ Tel Aviv Geometry and Dynamics Seminar, 60 minutes talk	05/2023
Symmetric probes and the classification of toric fibres Lisbon Geometry seminar, Lisbon, 60 minutes online talk	04/2023 [video link]
Toric reduction and applications BIRS workshop <i>Interactions between symplectic and complex convexity in 4 dimensions</i> , Banff, 50 minutes talk	04/2023 [video link]
Pinwheels as Lagrangian barriers Jerusalem Topology and Geometry Seminar, Jerusalem, 60 minutes talk	03/2023
From ATFs to exotic tori and back Workshop on Cluster Structures in Symplectic geometry, Heidelberg, 60 minutes talk	01/2023
Pinwheels as Lagrangian barriers Tel Aviv Geometry and Dynamics Seminar, 60 minutes talk	11/2022
Local exotic tori ETH Symplectic seminar, Zurich, 60 minutes talk	10/2022
Lagrangian tori in $S^2 \times S^2$ GeNeSys (Geneva Neuchâtel joint symplectic Seminar), 60 minutes talk	09/2022
Lagrangian torus fibrations and exotic tori Mirror symmetry for Looijenga interiors and beyond, Istanbul, 60 minutes talk	07/2022 [video link]
Squeezing the symplectic ball (up to a subset) Tel Aviv Geometry and Dynamics Seminar, 50 minutes online talk	03/2022
Toric symplectic manifolds/The Chekanov torus GGTI Online Seminar on toric symplectic manifolds joint w/ F. Schlenk, 2×60 minutes online lectures	08/2021 [video link]
On the classification of toric fibres Antwerp online Miniworkshop on Symplectic and Contact Dynamics, 50 minutes online talk	05/2021
Toric Reduction and the classification of toric fibres KIAS, Seoul, 2×45 minutes online talk	03/2021
The Chekanov torus in toric symplectic manifolds GeNeSys (Geneva Neuchâtel joint symplectic Seminar), 60 minutes online talk	11/2020
Real Lagrangian tori in toric symplectic manifolds Augsburg Workshop on real Symplectic Geometry, 60 minutes online talk	08/2020
Real Lagrangian tori in toric symplectic manifolds IAS/Montréal/Tel Aviv/Paris Symplectic Seminar, 20 minutes online talk	06/2020 [video link]
Real Lagrangian tori and Versal Deformations Fribourg topology seminar, Fribourg, 60 minutes talk	12/2019
Exotic Lagrangian tori and Versal Deformations KIAS, Seoul, 60 minutes talk	05/2019

RESEARCH VISITS

KIAS, Seoul, South Korea One month research visit, host: Joontae Kim	05/2019
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TEACHING

Teaching assistant

09/2017 – 08/2022

Université de Neuchâtel

- Analyse de Fourier, Fall 2017, 2h/week, course for BSc in mathematics
- Mécanique classique I, Fall 2017, 2h/week, course for MSc in mathematics
- Mécanique classique II, Spring 2018, 2h/week, course for MSc in mathematics
- Topologie, Fall 2018, 4h/week, course for BSc in mathematics
- Introduction aux EDPs, Fall 2018, 2h/week, course for MSc in mathematics
- Calcul différentiel et intégral I, Fall 2019, 3h/week, course for BSc in mathematics
- Espaces de Sobolev, Fall 2019, 2h/week, course for MSc in mathematics
- Introduction aux Probabilités, Fall 2019 4h/week, course for BSc in statistics
- Séminaire de lecture, Fall 2020, 2h/week, seminar for MSc in mathematics
- Géométrie Riemannienne, Fall 2020, 2h/week, course for MSc in mathematics
- Géométrie Symplectique, Fall 2020, 2h/week, course for MSc in mathematics
- Calcul différentiel et intégral I, Fall 2021, 3h/week, course for BSc in mathematics
- Séminaire de lecture, Fall 2021, 2h/week, seminar for MSc in mathematics
- Théorie de Morse, Spring 2022, 2h/week, course for MSc in mathematics

Teaching assistant

09/2016 – 06/2017

Université de Fribourg

- Algèbre linéaire I, Fall 2016, 2h/week, course for BSc in mathematics
- Algèbre linéaire II, Spring 2017, 2h/week, course for BSc in mathematics

Tutor

09/2015 – 06/2016

Université de Fribourg

- Analyse propédeutique, Fall 2015, 1h/week, course for BSc in natural sciences
- Statistiques propédeutiques, Spring 2016, 1h/week, course for BSc in natural sciences

PERSONAL SKILLS

Langues: English (C2), French (C2), German (C2), Luxembourgish (mother tongue)

Coding: \LaTeX , Basics in Python and Mathematica