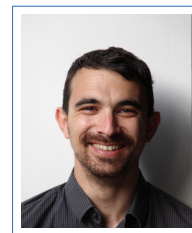


Lior Alon

CV

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Research interests

Mathematical physics, spectral geometry, quantum graphs, quasi-crystals, stable polynomials, dynamics and probability.

Academic Appointments

2020-2022 **Post-Doctoral Member**, Institute for Advanced Study, Princeton.

Academic Degrees

- 2015-2020 **Ph.D. in mathematics**, *Technion*, Haifa, Israel.
Quantum Graphs - nodal count, Neumann count and generic eigenfunctions. Supervisor - Prof. Ram Band. Direct track.
- 2012-2015 **B.Sc. in mathematics and physics**, *Technion*, Haifa, Israel.
Cum Lauda.
- 2006-2009 **B.A. multidisciplinary curriculum**, *Haifa University*, Haifa, Israel.
As part of the naval academy training. Magna Cum Lauda.

Awards

Excellence in research:

- 2020 The Foundation for Excellency in Mathematics award for outstanding doctoral dissertation (Technion).
- 2019 Jacobs scholarship (Technion).
- 2018 Haim Hanani prize (Technion).
- 2018 Pinchi scholarship (Technion).

Excellence in teaching:

- 2018-2019 Consistent excellence in teaching prize.
- 2017 Excellent teaching assistant prize.

Publications

Published:

L. Alon, R. Band (2021). *Neumann Domains on Quantum Graphs*. Ann. Henri Poincaré 22, 3391 - 3454. doi:10.1007/s00023-021-01061-0

L. Alon, R. Band, M. Bersudsky, S. Egger (2020). *Neumann domains on graphs and manifolds*. Analysis and Geometry on Graphs and Manifolds, vol. 461, 203-249.

L. Alon, R. Band, G. Berkolaiko (2018). *Nodal Statistics on Quantum Graphs*. Communications in Mathematical Physics, 1–40. doi:10.1007/s00220-018-3111-2

Y. Shapira, M. Mutzafi, G. Harari, I. Kaminer, L. Alon, M. Segev (2016). *Cerenkov radiation from particles carrying orbital angular momentum in a cylindrical waveguide*. Conference on Lasers and Electro-Optics (CLEO), 1-2

Submitted:

L. Alon, R. Band, G. Berkolaiko. *Universality of nodal count distribution in large metric graphs*. arXiv:2106.06096.

PhD dissertation:

L. Alon (2020). *Quantum graphs - Generic eigenfunctions and their nodal count and Neumann count statistics*. Technion, Haifa, Israel. arXiv:2010.03004

Selected Talks

Selected seminar talks

2021 *Neumann domains and count on metric (quantum) graphs*. Mathematical physics seminar, University of California, Davis.

2020 *Towards universality of the nodal statistics on metric graphs*. Analysis seminar, Institute of Advanced Study, Princeton. <https://www.ias.edu/video/analysis/2020/1012-LiorAlon>

2019 *A universal limit conjecture for nodal statistics of quantum graphs*. Analysis and PDE seminar, Massachusetts Institute of Technology.

2019 *A universal limit conjecture for nodal statistics of quantum graphs*. Applied mathematics seminar, Yale University.

Selected conference talks

2020 *Towards universality of the nodal statistics on metric graphs*. Quantum graphs in Mathematics, Physics and Applications, Stockholm University, Sweden.

2019 *Nodal and Neumann count distributions of quantum graphs*. Geometric aspects of harmonic analysis and spectral theory, Technion, Israel.

2018 *Quantum graphs, a central limit type conjecture for the nodal statistics*. Israel Physical Society annual meeting, Hebrew University, Israel.

2017 *The nodal count distribution for quantum graphs*. Analysis and geometry on graphs and manifolds, Potsdam, Germany.

Academic service

2018–today **Referee jobs.**

Journal of mathematical physics, Annals Henri Poincare, Experimental Mathematics, proceedings of the 8th ICCM

- 2018-2020 **Graduate Seminar organizer.**
Initiating and organizing the 'What Is' seminar, mathematics graduates seminar. Mathematics department, Technion.
- 2018 **Summer projects.**
Mentoring undergraduate students in a summer project together with Ram Band. Center for Mathematical Sciences, Technion.
- 2017 **Summer mini-course.**
Initiating and organizing a mini-course on k -theory. Mathematics department, Technion.

Teaching experience

- 2019 **Calculus, T.A.**
- 2015–2019 **Multivariable Calculus, T.A.**
- 2016–2018 **Introduction to Probability, T.A.**
- 2018 **Complex Analysis, T.A.**

Extra curricular activities

- 2016-2020 **Social events.**
Initiating and organizing the annual 'wine & cheese' social event for graduate students. Mathematics department, Technion.
- 2015-2020 **Students representative.**
Public activity as the representative of math graduate students. Students Association of the Technion.
- 2012-2015 **Students representative.**
Public activity as the representative of math undergraduate students. Students Association of the Technion.
- 2012-2017 **Competitive sports.**
Member of the Technion rowing crew, 3 times state-champions.

Non-academic experience

Seven years of service in the Israeli Navy as a naval officer.

Rank: Lieutenant commander (res.)

- 2011-2012 **Head of department, naval operations platoon.**
Planning, and executing highly complicated operations. Navy representative to civilian organizations. In charge of knowledge management
- 2009–2011 **Operations specialist officer in a missile boat.**
Leading a team of 15 soldiers. Operating technological systems.
- 2006–2009 **Naval academy.**

Languages

Hebrew (native speaker), English.