

# Alexander Yom Din

*Curriculum Vitae* (last updated: Apr 28, 2022)

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## Positions

- Mar 2020–... **Assistant Professor (tenure track)**, Hebrew University of Jerusalem.
- Sep 2019–Feb 2020 **Member**, Institute for Advanced Study, Princeton.
- 2016–2019 **Olga Tausky & John Todd Instructor in Mathematics**, California Institute of Technology.

## Education

- 2011–2016 **Ph.D. in Mathematics**, *Tel Aviv University*.  
Advisor: Joseph Bernstein  
Thesis title: On properties of the Casselman-Jacquet functor
- 2008–2011 **M.Sc. in Mathematics**, *Tel Aviv University*.  
Advisor: Joseph Bernstein  
Thesis title: Barr-Beck Theorem and Faithfully Flat Descent
- 2002–2005 **B.Sc. in Mathematics**, *Haifa University*.

## Grants

- 2020–2024 **ISF grant**.

## Research publications

(Refereed)

- **Second adjointness for tempered admissible representations of a real group**, Israel J. Math. **244** (2021), 215-244.  
(arXiv:1903.00582)
- **On parabolic restriction of perverse sheaves**, with R. Bezrukavnikov, Publ. Res. Inst. Math. Sci. **57** (2021), no. 3, 1089-1107.  
(arXiv:1810.03297)
- **On the Deligne-Lusztig involution for character sheaves**, Sel. Math. New Ser. **25:49** (2019).  
(arXiv:1810.03295)
- **An analog of the Deligne-Lusztig duality for  $(\mathfrak{g}, K)$ -modules**, with D. Gaitsgory, Adv. Math. **333** (2018), 212-265.  
(arXiv:1708.04210)
- **On the Casselman-Jacquet functor**, with T.-H. Chen and D. Gaitsgory, Proc. Sympos. Pure Math. **101** (2019), 73-112.  
(arXiv:1708.04046)

- **A formula for the geometric Jacquet functor and its character sheaf analog**, with *T.-H. Chen*, *GAGA* **27(4)** (2017), 772-797. (arXiv:1507.00606)
- **On properties of the Casselman-Jacquet functor**, Ph.D. thesis, Tel Aviv University. (arXiv:1708.04210)
- **Reciprocity laws and K-theory**, with *E. Musicantov*, *Annals of K-theory* **2-1** (2017), 27-46. (arXiv:1410.5391)

### (Preprints)

- **On tempered representations**, with *D. Kazhdan*. (arXiv:2111.11970)
- **A Paley-Wiener theorem for spherical  $p$ -adic spaces and Bernstein morphisms**. (arXiv:2002.10063)

## Students and postdocs

Postdoc Roman Gonin (Oct 2021 - ...)

## Teaching

### Hebrew University of Jerusalem

- Instructor Algebraic structures 1
- Instructor Representations of compact Lie groups and Lie algebras
- Instructor Category theory
- Instructor Fundamental concepts in representation theory

### California Institute of Technology

- Instructor Ma 7 (number theory for beginners)
- Instructor Ma 120c (semisimple algebras, Brauer group, representations of finite groups, etc.)
- Instructor Ma 191b (topics course: representation theory of real groups)
- Instructor Ma 145a (representation theory of finite groups)
- Instructor Ma 145b (representation theory of compact groups)
- Instructor Ma 5a (group theory)

### Tel Aviv University

- TA\* • Algebraic geometry • Linear algebra 1A (vector spaces and linear maps) • Linear algebra 2A (bilinear forms, Jordan form, etc.) • Algebra B1 (group theory) • Complex analysis • ODE for engineers • Methods of calculus for engineers • Linear algebra for engineers

### Haifa University

- TA\* • Probability theory • Galois theory

(\* All "TA" items above include preparing and delivering weekly frontal lectures, preparing homework sheets and oftentimes their solutions, conducting office hours, grading exams)

## Research Talks

Mar 2022 **HSE/Skoltech**, *Seminar on Lie algebras and applications (by Zoom)*.

- Feb 2022 **Stockholm Mathematics Centre**, *Wednesday Zoom Seminar*.
- May 2020 **Conference in honor of Joseph Bernstein**, *Weizmann institute (by Zoom)*.
- Dec 2019 **Johns Hopkins University**, *Number Theory Seminar*.
- Oct 2019 **Institute for Advanced Study**, *Short talks by postdoctoral members*.
- Jan 2018 **University of Copenhagen**, *Algebra and Topology Seminar*.
- Jan 2018 **Northeastern University**.
- Dec 2018 **The Hebrew University of Jerusalem**, *Colloquium*.
- Dec 2018 **Weizmann Institute of Science**, *Seminar on Representation Theory and Algebraic Geometry*.
- Nov 2018 **Univeristy of Wisconsin-Madison**, *Colloquium*.
- Apr 2018 **Univeristy of Wisconsin-Madison**, *Algebra and Algebraic Geometry Seminar*.
- Apr 2018 **Northwestern University**, *Algebra Seminar*.
- Nov 2017 **California Institute of Technology**, *Algebra and Geometry Seminar*.
- Feb 2017 **Yale University**, *Algebra and Number Theory Seminar*.
- Feb 2016 **California Institute of Technology**, *Number Theory Seminar*.
- Nov 2016 **California Institute of Technology**, *Number Theory Seminar*.
- Aug 2015 **Max Planck Institute for Mathematics**, *Representation Theory Afternoon*.
- Aug 2015 **Summer School "Reductive Groups"**, *Schloß Schney*.
- Jun 2015 **Weizmann Institute of Science**, *Algebraic Geometry and Representation Theory Seminar*.
- May 2015 **The Hebrew University of Jerusalem**, *Number Theory/Algebraic Geomtery Seminar*.

## Professional services

- Oct 2021 - ... Coorganizer of the colloquium at the Hebrew University of Jerusalem
- Fall 2017 - Coorganizer of the "Algebra and Geometry Seminar" at the California Institute of Technology
- Spring 2019
- Referee for the journals: • *Duke Mathematical Journal* • *Selecta Mathematica, New Series* • *International Mathematics Research Notices* • *Advances in Mathematics* • *Representation Theory*

## Languages

- Hebrew **Fluent**
- Russian **Fluent**
- English **Fluent**
- Arabic **Intermediate**  
(Levantine)