Omri Nisan Solan - CV

Einstein institute of Mathematics – Hebrew University of Jerusalem - Ph.D. student.

Website: omriso.github.io

Education:

- 2010 - 2015: Bachelor of Science, Mathematics, Tel Aviv University (Summa cum laude).
- 2015 - 2021: Master student at Tel Aviv university, under the supervision of Prof. Barak Weiss (Summa cum laude).
- 2022 - present: Ph.D. student at the Hebrew University of Jerusalem, under the supervision of Prof. Elon Lindenstrauss.

Research Interest:

My primary research focus is on homogeneous dynamics. I leverage tools from number theory, probability, and algebraic topology to address problems in this field.

Teaching:
- 2023 - Teaching assistant, Hebrew University of Jerusalem, the course "Fundamental concepts in spectral analysis".
- 2024 - Teaching assistant, Hebrew University of Jerusalem, the course "Fundamental concepts in commutative algebra and algebraic geometry".

Awards:

- International Mathematical Olympiad, 2012 silver medal, 2013 gold medal, 2014 silver medal.
- International Mathematics Competition for University Students, 2014, First Prize, 2015 Grand First Prize & Prize for special solution, 2017 First Prize.
- Dean's award for distinguished students - Tel Aviv University (2015).
- Award of excellence for Master's Studies Tel Aviv University (2021).

Active Participation in Scientific Meetings:
- 2015 - "Divergent Trajectories in $SL_3(R)/SL_3(Z)$", Dynamics & Probability - Hebrew University of Jerusalem, Israel.
- 2017 - "Stable and Well-Rounded Lattices in Diagonal Orbits" - Action Now Wandering Seminar, Ben Gurion University, Israel.
- 2021 - "Parametric Geometry of Numbers with General Flows", Diophantine Analysis and Related Topics, online conference.
- 2021 - "Geometry of the Casp and Divergent Trajectories", Dynamics & Probability - Hebrew University of Jerusalem, Israel.

- 2022 - "Algebraic Divergence and Geometry of Symmetric Spaces", Groups & Dynamics Seminar - Tel Aviv University, Israel.
- 2023 – "Limits of Compact Diagonal Orbits in the Lattice Space", 'Diophantine Analysis, Dynamics and Related Topics' conference - Technion, Israel.
- 2024 - "Divergence of large dimensional diagonal orbits", 'Diagonal actions in the space of lattices' workshop - Ecole Polytechnique, Palaiseau, France.
- 2024 - "Gap in critical exponents of $SL_2(\mathbb{R})$ orbits in nonarithmetic quotients of $SL_2(\mathbb{C})$", 'Group Actions with Hyperbolicity and Measure Rigidity' workshop - Institut Henri Poincare, Paris, France.
- 2024 - "Gap in critical exponents of $SL_2(\mathbb{R})$ orbits in nonarithmetic quotients of $SL_2(\mathbb{C})$", 'Distribution of orbits: Arithmetics and Dynamics' workshop - Paxmontana Switzerland.

Service to the Community:
- 2015-2017 - Trainer in the Israeli Mathematical Olympiad Program.

Publications:

- E. Lehrer, E. Solan, and O. N. Solan. The Value Functions of Markov Decision Processes. **Operations Research Letters** 44 (2016), 587–591.
- O. N. Solan, Y. Solomon and B. Weiss. On problems of Danzer and Gowers and dynamics on the space of closed subsets of R^n, **International Mathematics Research Notices** 21 (2017), 6584–6598.
- L. Buhovsky, E. Solan, and O.N. Solan. Monovex Sets. **Studia Mathematica** 242:2 (2018), 165–178.
- O. N. Solan. Stable and well-rounded lattices in diagonal orbits. **Israel Journal of Mathematics** 234:2 (2019), 501–519.
- L. Liao, R. Shi, O.N. Solan and N. Tamam. Hausdorff dimension of weighted singular vectors. **Journal of the European Mathematical Society** 22:3 (2020), 833-875.
- E. Solan, O.N. Solan, and R. Solan. Jointly Controlled Lotteries with Biased Coins. **Games and Economic Behavior** 119 (2020), 383-391.
- E. Solan and O.N. Solan. Quitting Games and Linear Complementarity Problems. **Mathematics of Operations Research** 45:2 (2020), 434-454.
- E. Solan and O.N. Solan. Logit Equilibrium as an Approximation of Nash Equilibrium. **Operations Research Letters** 48:3 (2020), 262-265.

- E. Solan and O. N. Solan. Sunspot equilibrium in positive recursive general quitting games. **International Journal of Game Theory** 50:4 (2021), 891-909.

- E. Solan and O. N. Solan. Browder's theorem with general parameter space. **Journal of Fixed Point Theory and Applications** (2022), 24, 1-8.

- E. Solan and O. N. Solan. Browder's theorem through Brouwer's fixed point theorem. **The American Mathematical Monthly** (2023), 1-5.

- O. N. Solan, and N.Tamam. On topologically big divergent trajectories. **Duke Mathematical Journal** (2023), 3429-3474.

- O. N. Solan and Y. Yifrach. Tori Approximation of Families of Diagonally Invariant Measures. **Geometric and Functional Analysis** (2023), 1354-1378.

Submitted for Publication:
- O. N. Solan and N. Tamam. Quantitative instability of algebraic representations arXiv:2209.01475.
- O. N. Solan and A. Wieser. Birkhoff generic points on curves in horospheres. arXiv:2301.10671.
- T. Meyerovich and O. N. Solan. Automatic continuity of Polynomial maps and cocycles arXiv:2306.15979.
- O. N. Solan, Critical exponent gap and leafwise dimension. arXiv:2404.00700.

Preprints:
- O. N. Solan. Parametric Geometry of numbers for a general flow, arXiv:2106.01707.