

CURRICULUM VITAE

Konstantinos Tyros

Contact information

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Personal data

Date of birth: 23 July 1982
Citizenship: Greek
Marital status: Single
Military service: 12 months (fulfilled)
Languages: Greek, English

Education & Employment

- 2018–present** : Associate Professor, *University of Athens*.
2016–2018 : Assistant Professor, *Koç University*.
2014–2016 : Postdoctoral Fellow, *University of Warwick*.
2011–2014 : Postdoctoral Fellow, *University of Toronto*.
2007–2010 : PhD in Mathematics, *National Technical University of Athens*.
Title: *Ramsey Theory and Applications in Banach Space Theory*.
Supervisor: *Vassilis Kanellopoulos*.
2006–2007 : MSc in Applied Mathematics, *National Technical University of Athens*.
2000–2006 : BSc in Applied Mathematics, *National Technical University of Athens*.

Research interests

- Combinatorics: Ramsey Theory, Density Ramsey Theory, Probabilistic Combinatorics.
- Functional Analysis: Geometry of Banach spaces.

Publications & Preprints

- (27) **A combinatorial approach to nonlinear spectral gaps**
with D. J. Altschuler, P. Dodos and K. Tikhomirov
submitted for publication (35 pages)
available at [arXiv:2410.04394](https://arxiv.org/abs/2410.04394).
- (26) **A Dual Ramsey theorem for trees**
with S. Todorćević
submitted for publication (37 pages)
available at [arXiv:2207.14599](https://arxiv.org/abs/2207.14599).
- (25) **Moser–Tardos Algorithm with small number of random bits**
with E. Csóka, Ł. Grabowski, A. Máthé and O. Pikhurko
submitted for publication (31 pages)
available at [arXiv:2203.05888](https://arxiv.org/abs/2203.05888).

- (24) **Decompositions of finite high-dimensional random arrays**
with P. Dodos and P. Valettas
 submitted for publication (46 pages)
 available at [arXiv:2102.11102](https://arxiv.org/abs/2102.11102).
- (23) **Anticoncentration and Berry-Esseen bounds for random tensors**
with P. Dodos
 Probability Theory and Related Fields 187 (2023), no. 1-2, 317–384.
- (22) **Concentration estimates for functions of finite high-dimensional random arrays**
with P. Dodos and P. Valettas
 Random Structures Algorithms 63 (2023), no. 4, 997–1053.
- (21) **A structure theorem for stochastic processes indexed by the discrete hypercube**
with P. Dodos
 Forum of Mathematics, Sigma, Vol. 9 (2021), e8, 1–30.
- (20) **Subgaussianity is hereditarily determined**
with P. Dodos
 Proceedings of the American Mathematical Society 148 (2020), 2915–2930.
- (19) **Strong forms of stability from flag algebra computations**
with Oleg Pikhurko and Jakub Sliachan
 Journal of Combinatorial Theory, Series B 135 (2019), 129–178.
- (18) **The Bradley–Terry condition is L_1 -testable**
with A. Georgakopoulos
 Discrete Mathematics 341 (2018), no. 4, 1171–1177.
- (17) **A concentration inequality for product spaces**
with P. Dodos and V. Kannellopoulos
 Journal of Functional Analysis 270 (2016), no. 2, 609–620.
- (16) **Primitive recursive bounds for the finite version of Gowers’ c_0 theorem**
 Mathematika 61 (2015), no. 3, 501–522.
- (15) **A disjoint union theorem for trees**
with S. Todorčević
 Advances in Mathematics 285 (2015), 1487–1510.
- (14) **Combinatorial structures on van der Waerden sets**
 Combinatorics, Probability and Computing 24 (2015), no. 6, 929–953.
- (13) **On colorings of variable words**
 Discrete Mathematics 338 (2015), no. 6, 1025–1028.
- (12) **A density version of the Carlson–Simpson theorem**
with P. Dodos and V. Kannellopoulos
 Journal of the European Mathematical Society 16 (2014), no. 10, 2097–2164.
- (11) **On the structure of the set of higher order spreading models**
with B. Sari
 Studia Mathematica 223 (2014), no. 2, 149–173.

- (10) **Measurable events indexed by words**
with P. Dodos and V. Kanellopoulos
 Journal of Combinatorial Theory, Series A 127 (2014), 176–223.
- (9) **A simple proof of the density Hales–Jewett theorem**
with P. Dodos and V. Kanellopoulos
 International Mathematics Research Notices (2014), no. 12, 3340–3352.
- (8) **Oscillation stability for continuous monotone surjections**
with S. Todorcevic
 Discrete Mathematics 324 (2014), 4–12.
- (7) **Measurable events indexed by products of trees**
with P. Dodos and V. Kanellopoulos
 Combinatorica 34 (2014), no. 4, 427–470.
- (6) **Dense subsets of products of finite trees**
with P. Dodos and V. Kanellopoulos
 International Mathematics Research Notices (2013), no. 4, 924–970.
- (5) **Finite order spreading models**
with S. A. Argyros and V. Kanellopoulos
 Advances in Mathematics 234 (2013), 574–617.
- (4) **Higher order spreading models**
with S. A. Argyros and V. Kanellopoulos
 Fundamenta Mathematicae 221 (2013), no. 1, 23–68.
- (3) **Subsets of products of finite sets of positive upper density**
with S. Todorcevic
 Journal of Combinatorial Theory, Series A 120 (2013), no. 1, 183–193.
- (2) **Measurable events indexed by trees**
with P. Dodos and V. Kanellopoulos
 Combinatorics, Probability and Computing 21 (2012), no. 3, 374–411.
- (1) **A discretized approach to W. T. Gowers’ game**
with V. Kanellopoulos
 Bulletin of the Polish Academy of Sciences, Mathematics 58 (2010), 1–16.

Teaching experience

Instructor for the following courses:

- Calculus I and II (MAT 186, MAT 187 and MAT 136),
- Introduction to Mathematical Logic (MAT 309).

Teaching Assistantship (TA) for the following courses:

- Functional Analysis (graduate course),
- Measure Theory (graduate course),
- Real Analysis,
- Functional Analysis.

Honors/Awards

- Degree of Excellence from the T.E.E.-T.C.G. (Technical Chamber of Greece).
- Scholarship N.S.F. (National Scholarship Foundation) for the 4th academic year of my undergraduate studies.
- Scholarship N.S.F. (National Scholarship Foundation) for the 3rd academic year of my undergraduate studies.

Journal referee

- Advances in Mathematics.
- Journal of Symbolic Logic.
- Proceedings of the London Mathematical Society.
- Combinatorica.
- Journal of Combinatorial Theory, Series A.
- Fundamenta Mathematicae.
- Order.

Conference co-organization

- 09/2015: *Non-Combinatorial Combinatorics*, University of Warwick.

Talks/Conference participation

- 06/2024: “*Mathematical Analysis*” in honor of Spiros Argyros, National Technical University of Athens (invited talk).
- 06/2023: *Analysis Seminar*, University of Crete (invited talk).
- 04/2021: *Mathematics Seminar*, University of Thessaloniki (invited talk).
- 07/2019: *Summer Meeting of Young Researchers in Mathematics*, University of Athens (invited talk).
- 06/2018: *First Congress of Greek Mathematicians*, University of Athens (invited talk).
- 11/2017: *Ultrafilters, Ramsey theory and dynamics*, University of Lyon 1 (invited talk).
- 09/2017: *Extremal Combinatorics*, University of Warwick (invited talk).
- 04/2017: *Mathematics Seminar*, Bilkent University (invited talk).
- 03/2017: *Mathematics Seminar*, Mimar Sinan University (invited talk).
- 03/2017: *Mathematics Seminar*, Boğaziçi University (invited talk).
- 10/2016: *Mathematics Seminar*, Galatasaray University (invited talk).
- 02/2016: *Pure Mathematics Seminar*, University of Lancaster (invited talk).
- 11/2015: *Combinatorics Seminar*, University of Cambridge (invited talk).
- 09/2015: *Workshop on Extremal and Probabilistic Combinatorics*, University of Birmingham (participation).

- 09/2015: *LMS-EMS Mathematical Weekend*, University of Birmingham (participation).
- 06/2015: *25th British Combinatorial Conference*, University of Warwick (talk).
- 06/2015: *Regularity and Analytic Methods in Combinatorics*, University of Warwick (participation).
- 03/2015: *Forcing and its Applications, Retrospective Workshop*, Fields Institute, Canada (talk).
- 09/2014: *Tutte Seminar*, University of Waterloo (invited talk).
- 09/2014: *Toronto Set Theory Seminar*, University of Toronto (invited talk).
- 06/2014: *Graph limits, groups and stochastic processes*, MTA Renyi Institute, Hungary (participation).
- 05/2014: *7th Young Set Theory Workshop*, Banach Center Conferences, Poland (invited talk).
- 03/2014: *Toronto Set Theory Seminar*, University of Toronto (2 invited talks).
- 01/2014: *Joint Mathematics Meetings*, Baltimore, USA (participation).
- 12/2013: *Toronto Set Theory Seminar*, University of Toronto (invited talk).
- 11/2013: *Axiomatic approaches to forcing techniques in set theory*, BIRS, Canada (participation).
- 10/2013: *Millican Colloquium*, University of North Texas (invited talk).
- 06/2013: *Analysis Seminar*, University of Crete (invited talk).
- 06/2013: *Ergodic Theory with Connections to Arithmetic*, Heraklion, Greece (participation).
- 04/2013: *Toronto Set Theory Seminar*, University of Toronto (invited talk).
- 03/2013: *Extremal Combinatorics at Illinois*, Urbana–Champaign, USA (participation).
- 10/2012: *Arbeitsgemeinschaft: Ergodic Theory and Combinatorial Number Theory*, Oberwolfach, Germany (talk).
- 08/2012: *Geometry of Banach spaces*, CIRM, France (participation).
- 07/2012: *Additive Combinatorics in Paris 2012*, IHP, France (participation).
- 03/2012: *Banach Space Theory*, BIRS, Canada (invited talk).
- 11/2011: *Toronto Set Theory Seminar*, University of Toronto (2 invited talks).
- 02/2011: *Set-theoretic Techniques in Functional Analysis*, Castro Urdiales, Spain (talk).
- 06/2010: *International Functional Analysis Meeting*, Valencia, Spain (participation).
- 05/2010: *13th Panhellenic Conference in Mathematical Analysis*, Ioannina, Greece (talk).
- 12/2008: *Descriptive Set Theory in Paris*, Paris, France (participation).