

Pavlos Motakis

CONTACT INFORMATION	Department of Mathematics and Statistics York University 4700 Keele Street, Toronto, ON M3J 1P3	<i>e-mail:</i> pmotakis@yorku.ca <i>website:</i> pmotakis.mathstats.yorku.ca
CITIZENSHIP	Greek, Canadian Permanent Resident.	
LANGUAGES	Native: Greek. Fluent: English and German.	
CURRENT POSITION	Assistant Professor, York University (7/2020 - present).	
POSTDOCTORAL POSITIONS	<ul style="list-style-type: none">• J. L. Doob Research Assistant Professor, University of Illinois at Urbana-Champaign (8/2018-7/2020).• Visiting Assistant Professor, Texas A&M University (8/2015-8/2018).	
EDUCATION	Ph.D. in Mathematics (1/2011-3/2015). <ul style="list-style-type: none">• School of Applied Mathematical and Physical Sciences, National Technical University of Athens.• Advisor: Professor Spiros Argyros.• Thesis: Hereditarily Indecomposable Spaces with Heterogeneous Structure. Diploma (BS and MS equivalent) in Applied Mathematical and Physical Sciences (2010). <ul style="list-style-type: none">• School of Applied Mathematical and Physical Sciences, National Technical University of Athens.• Undergraduate dissertation: The Radon-Nikodým Property and Martingales in Banach Spaces.	
RESEARCH INTERESTS	Operators on Banach spaces, algebras of operators, local and asymptotic structure of Banach spaces, hereditarily indecomposable Banach spaces, \mathcal{L}_∞ -spaces, metrical characterization of non-local properties of Banach spaces.	
RESEARCH GRANTS	<ul style="list-style-type: none">• NSERC Discovery Grant, Applications of Asymptotic Structures in Banach Spaces, RGPIN-2021-03639, CA\$23,000 per annum, 2021-2026.• NSERC Discovery Grant Launch Supplement, Applications of Asymptotic Structures in Banach Spaces, DGEGR-2021-00392, CA\$12,500, 2021.• National Science Foundation, Geometry of Banach Spaces and their Spaces of Operators, DMS 1600600 US\$92,411, PI, 08/2016-07/2019 (transferred to UIUC as DMS 1912897 and extended to 07/2020 and then transferred to T. Oikhberg).• AMS-Simons Travel Grant, US\$4000, 07/2016-06/2018 (Declined after being awarded NSF grant).	
PUBLISHED ARTICLES	<ol style="list-style-type: none">(1) A. Fan, J. Montemurro, P. Motakis, N. Praveen, A. Rusonik, P. Skoufranis, and N. Tobin, <i>Restricted invertibility of continuous matrix functions</i>, Oper. Matrices 16 (2022), no. 4, 1191-1217.(2) S. A. Argyros, A. Georgiou, A. Manoussakis, and P. Motakis, <i>The complete separation of the two finer asymptotic ℓ_p structures for $1 \leq p < \infty$</i>, Forum Math. Sigma 10 (2022), Paper No. e114, 47 pp.(3) F. Baudier, P. Motakis, Th. Schlumprecht, and A. Zsák, <i>Stochastic approximation of lamplighter metrics</i>, Bull. Lond. Math. Soc. 54 (2022), no. 5, 1804-1826(4) R. Lechner, P. Motakis, P. F. X. Müller, and Th. Schlumprecht, <i>The space $L_1(L_p)$ is primary for $1 < p < \infty$</i>, Forum Math. Sigma 10 (2022), Paper No	

e32, 36pp.

- (5) F. Baudier, G. Lancien, P. Motakis, and Th. Schlumprecht, *The geometry of Hamming-type metrics and their embeddings into Banach spaces*, Israel J. Math **244** (2021), no. 2, 681-725.
- (6) F. Baudier, G. Lancien, P. Motakis, and Th. Schlumprecht, *A new coarsely rigid class of Banach spaces*, J. Inst. Math. Jussieu **20** (2021), no. 5, 1729-1747.
- (7) R. Lechner, P. Motakis, P. F. X. Müller, and Th. Schlumprecht, *The factorization of $\ell_\infty(X_k)$* , Math. Proc. Cambridge Philos. Soc. **171** (2021), no. 2, 421-448.
- (8) F. Baudier, P. Motakis, Th. Schlumprecht, and A. Zsák, *On the bi-Lipschitz geometry of lamplighter graphs*, Discrete Comput. Geom. **66** (2021), no. 1, 203-235.
- (9) F. Baudier, G. Lancien, P. Motakis, and Th. Schlumprecht, *Coarse and Lipschitz universality*, Fund. Math. **254** (2021), no. 2, 181-214.
- (10) R. Lechner, P. Motakis, P. F. X. Müller, and Th. Schlumprecht, *Strategically reproducible bases and the factorization property*, Israel J. Math. **238** (2020), no. 1, 13-60.
- (11) S. A. Argyros, A. Georgiou, and P. Motakis, *non-asymptotic ℓ_1 spaces with unique ℓ_1 asymptotic model*, Bull. Hellenic Math. Soc. **64** (2020), 32-55.
- (12) S. A. Argyros and P. Motakis, *On the complete separation of asymptotic structures in Banach spaces*, Adv. Math. **362** (2020), 106962, 51 pp.
- (13) Y. Dai, A. Hore, S. Jiao, T. Lan and, P. Motakis, *Continuous factorization of the identity matrix*, Involve **13** (2020), no. 1, 149-164.
- (14) D. Kutzarova and P. Motakis, *Asymptotically symmetric spaces with hereditarily non-unique spreading models*, Proc. Amer. Math. Soc. **148** (2020), no. 4, 1697-1707.
- (15) S. A. Argyros, A. Georgiou, A.-R. Lagos, and P. Motakis, *Joint spreading models and uniform approximation of bounded operators*, Studia Math. **253** (2020), no. 1, 57-107.
- (16) P. Motakis, D. Puglisi, and A. Toliaas, *Algebras of diagonal operators of the form scalar-plus-compact are Calkin algebras*, Michigan Math. J. **69** (2020), no. 1, 97-152.
- (17) S. A. Argyros and P. Motakis, *The scalar-plus-compact property in spaces without reflexive subspaces*, Trans. Amer. Math. Soc. **371** (2019), no. 3, 1887-1924.
- (18) P. Motakis and Th. Schlumprecht, *A metric interpretation of reflexivity for Banach spaces*, Duke Math. J. **166** (2017), no. 16, 3001-3084.
- (19) S. A. Argyros, P. Motakis, and B. Sari, *A study of conditional spreading sequences*, J. Funct. Anal. **273** (2017), no. 3, 1205-1257.
- (20) S. A. Argyros and P. Motakis, *A dual method of constructing hereditarily indecomposable Banach spaces*, Positivity **20** (2016), no. 3, 625-662.
- (21) S. A. Argyros, I. Gasparis, and P. Motakis, *On the structure of separable \mathcal{L}_∞ -spaces*, Mathematika **62** (2016), no. 3, 685 - 700.
- (22) P. Motakis, D. Puglisi, and D. Zisimopoulou, *A hierarchy of Banach spaces with $C(K)$ Calkin algebras*, Indiana Univ. Math. J. **65** (2016), no. 1, 39-67.
- (23) K. Beanland, R. Causey, and P. Motakis, *Arbitrarily distortable Banach spaces of higher order*, Israel J. Math. **214** (2016), no. 2, 553-581.
- (24) K. Beanland, D. Freeman, and P. Motakis, *The stabilized set of p 's in Krivine's theorem can be disconnected*, Adv. Math. **281** (2015), 553-577.
- (25) S. A. Argyros and P. Motakis, *A reflexive hereditarily indecomposable space*

with the hereditary invariant subspace property, Proc. Lond. Math. Soc. (3) **108** (2014), no. 6, 1381-1416.

- (26) S. A. Argyros and P. Motakis, *A hereditarily indecomposable Banach space with rich spreading model structure*, Israel J. Math. **203** (2014), no. 1, 341-387.
- (27) S. A. Argyros and P. Motakis, *α -Large families and applications to Banach space theory*, Topology Appl. **172** (2014), 47-67.
- (28) S. A. Argyros, K. Beanland, and P. Motakis, *Strictly singular operators in Tsirelson like spaces*, Illinois J. Math. **57** (2013), no. 4 1173-1217.
- (29) S. A. Argyros and P. Motakis, *Examples of k -iterated spreading models*, Studia Math. **217** (2013), no. 1, 57-78.
- (30) P. Motakis, *Separable spaces of continuous functions as Calkin algebras*, arXiv:2110.10868 (accepted in J. Amer. Math. Soc.).
- (31) P. G. Casazza, S. J. Dilworth, D.Kutzarova, and P. Motakis, *New characterizations of the unit vector basis of c_0 or ℓ_p* , arXiv:2204.10143 (accepted in Canad. Math. Bull.).
- (32) P. G. Casazza, S. J. Dilworth, D. Kutzarova, and P. Motakis, *On uniqueness and plentitude of subsymmetric sequences*, arXiv:2112.09602 (accepted in Israel J. Math.).
- (33) S. A. Argyros, A. Manoussakis, and P. Motakis *Variants of the James Tree space*, arXiv:2012.06286 (accepted in Israel J. Math.).

ARTICLES IN
PRESS

GRADUATE
SUPERVISION

- PhD Supervision.
- Konstantinos Konstantos, Fall 2021 - Present (joint with Paul Skoufranis).
- MA Committees.
- Tristan Tiburcio, Summer 2022.
- MA Seminars.
- Anif Shikder, Summer 2021.

UNDERGRADUATE
RESEARCH
PROJECTS

- Dean's Undergraduate Research Awards, York University.
- Factorization of continuous matrix functions in a multidimensional domain.
Duration: 05/2022-08/2022.
Participants: Jeffrey Marshall-Milne (York University).
Products: One poster presentation and one research article in preparation.
- Fields Undergraduate Summer Research Program, Fields Institute.
- Quantitative estimates in matrix theory (joint with Paul Skoufranis).
Duration: 07/2021-08/2021.
Participants: Adrian Fan (UCLA), Jack Montemurro (University of Toronto), Naina Praveen (Ashoka University), Alyssa Rusonik (University of Toronto).
Products: One research article submitted to a peer reviewed journal.
- Illinois Geometry Lab, University of Illinois at Urbana-Champaign.
- Continuous factorization of the identity matrix.
Duration: 01/2019-05/2019.
Participants: Yuying Dai (UIUC), Ankush Hore (UIUC), Siqi Jiao (UIUC), and Tianxu Lan (UIUC).
Products: One poster presentation and one research article published in Involve.
Awards: runner-up for the 2020 IGL Research Award.

INVITED
LECTURES

- Progress in Functional Analysis: Methods and Applications, September 20, 2022, Lecce, Italy (delivered on MS Teams).
Title: Separable spaces of continuous functions as Calkin algebras
- Second Congress of Greek Mathematicians, July 6, 2022, Athens, Greece.
Title: Separable spaces of continuous functions as Calkin algebras.
- Greek Mathematical Seminar, Dept. of Math., University of Cyprus, May 11,

- 2022, Zoom.
Title: Primary Banach spaces.
- Seminar in Operator Theory and Operator Algebras, Dept. of Math., University of Virginia, May 3, 2022, Charlottesville, Virginia, USA.
Title: Strategically reproducible bases and the factorization property.
 - Virginia Operator Theory and Complex Analysis Meeting, November 20, 2021, Richmond, Virginia, USA.
Title: Separable spaces of continuous functions as Calkin algebras.
 - International Workshop on Operator Theory and its Applications, Special Session in Operator Ideals and Operators on Banach Spaces, August 14, 2021, Zoom.
Title: Spaces of continuous functions as Calkin algebras.
 - Seminar in Operator Theory and Operator Algebras, Dept. of Math., University of Virginia, February 2, 2021, Zoom.
Title: The space $L_1(L_p)$ is primary.
 - Banach Spaces Webinar, Dept. of Math., University of North Texas, January 29, 2021, Zoom.
Title: The space $L_1(L_p)$ is primary.
 - Session on “Logic and its Applications” at the 2020 Canadian Mathematical Society Winter Meeting, Montréal December 3-8, 2020, Zoom.
Title: Coarse Universality.
 - Banach Spaces Webinar, Dept. of Math., University of North Texas, April 10, 2020, Zoom.
Title: Coarse Universality.
 - Colloquium Lecture, Dept. of Math., York University, April 2, 2020, Zoom.
Title: Combinatorics and Descriptive Set Theory in Banach Spaces.
 - Mathematical Sciences Colloquium, University of Texas at Dallas, January 28, 2020, Dallas, Texas, USA.
Title: Metric embeddings of graphs into Banach spaces
 - Special Colloquium, Dept. of Math., University of Illinois at Urbana-Champaign, December 12, 2019, Urbana, Illinois, USA.
Title: Combinatorics and Descriptive Set Theory in Banach Spaces.
 - Mathematics Colloquium, Dept. of Math., University of Illinois at Urbana-Champaign, November 21, 2019, Urbana, Illinois, USA.
Title: Metric embeddings of graphs into Banach spaces.
 - Colloquium Lecture, Dept. of Math., University of Oklahoma, November 14, 2019, Norman, Oklahoma, USA.
Title: Metric embeddings of graphs into Banach spaces.
 - AMS Spring Sectional Meeting, April 13-14, 2019, Hartford, Connecticut, USA.
Title: On the coarse geometry of the class of asymptotic c_0 -spaces..
 - Functional Analysis Seminar of Dept. of Math., University of Alberta, January 31 and February 1, 2019, Edmonton, Alberta, Canada.
Title: Strategically reproducible bases and the factorization property (2 parts).
 - International Conference on Mathematics and Statistics, May 7-10, 2018, Memphis, Tennessee, USA.
Title: Joint spreading models and uniform approximation of bounded operators.
 - Analysis Seminar of Dept. of Math., Johannes Kepler University, March 15, 2018, Linz, Austria.
Title: Joint spreading models and uniform approximation of bounded operators.
 - Non Linear Functional Analysis, March 5-9, 2018, Luminy, Marseille, France.
Title: Joint spreading models and uniform approximation of bounded operators.
 - Colloquium Lecture, Dept. of Math., Koç University, February 12, 2018, Istan-

bul, Turkey.

Title: Applications of Schreier Families in Banach Space Theory.

- Colloquium Lecture, Dept. of Math., University of Mississippi, February 5, 2018, Oxford, Mississippi, USA.
Title: Applications of Schreier Families in Banach Space Theory.
 - Geometric Topology and Geometry of Banach Spaces, May 14-19, 2017, Eilat, Israel.
Title: Spaces of compact diagonal operators as Calkin algebras of Banach spaces.
 - AMS Spring Eastern Sectional Meeting, May 6-7, 2017, New York, USA.
Title: A study of conditional spreading sequences.
 - Learning Sem. in An. and Prob. of Dept. of Math., University of Michigan, April 13, 2017, Ann Arbor, Michigan, USA.
Title: The stabilized set of p 's in Krivine's theorem can be disconnected.
 - Millican Colloquium, University of North Texas, January 30, 2017, Denton, Texas, USA.
Title: A metric interpretation of reflexivity for Banach spaces.
 - Colloquium Lecture, Dept. of Math., University of Oklahoma January 19, 2017, Norman, Oklahoma, USA.
Invited lecture: A metric interpretation of reflexivity for Banach spaces.
 - Logic Sem. of the Dept. of Math., University of Illinois at Urbana-Champaign, September 20, 2016, Urbana, Illinois, USA.
Title: A metric interpretation of reflexivity for Banach spaces.
 - Summer Informal Regional Functional Analysis Sem. (SUMIRFAS), July 29-31, 2016, College Station, Texas, USA.
Title: A metric interpretation of reflexivity for Banach spaces.
 - Transfinite Methods in Banach Spaces and Algebras of Operators, July 18-22, 2016, Bedlewo, Poland.
Title: On HI Banach spaces without reflexive subspaces and their spaces of operators.
 - Conference on Geometric Functional Analysis and its Applications, October 27-31, 2014, Besançon, France.
Title: The stabilized set of p 's in Krivine's theorem can be disconnected.
 - Virginia Operator Theory and Complex Analysis Meeting, November 3, 2012, Richmond, Virginia, USA.
Title: Saturation under constraints and applications to the invariant subspace problem for reflexive spaces.
- CONTRIBUTED LECTURES
- Recent Advances in Functional Analysis, October 11-14, 2018, Kent, Ohio, USA.
Title: Strategically reproducible bases and the factorization property.
 - AMS Fall Central Sectional Meeting, September 9-10, 2017, Denton, Texas, USA.
Title: Spaces of compact diagonal operators as Calkin algebras of Banach spaces.
 - Seminar Lecture, Dept. of Math., National University of Singapore, August 10, 2017, Singapore.
Title: Local and asymptotic properties with implications on operators on Banach spaces
 - Infinite Dimensional Analysis: Celebrating Richard Aron's Work and Impact, October 28-30, 2016, Kent, Ohio, USA.
Title: A metric interpretation of reflexivity for Banach spaces
 - AMS Fall Southeastern Sectional Meeting, October 17-18, 2015, Memphis, Tennessee, USA.
Title: On the structure of separable \mathcal{L}_∞ -spaces.

- First Brazilian Workshop in Geometry of Banach Spaces, August 25-29, 2014, Maresias, Brazil.
Title: The stabilized set of p 's in Krivine's theorem can be disconnected.
 - Geometry of Banach Spaces - A Conference in Honor of Stanimir Troyanski, June 10-13, 2014, Albacete, Spain.
Title: A hierarchy of separable commutative Calkin algebras.
 - Workshop on Set Theoretic Methods in Compact Spaces and Banach Spaces, April 17-21, 2013, Warsaw, Poland.
Title: Non separable reflexive spaces admitting ℓ_1 as a unique spreading model.
 - Geometry of Banach spaces, August 27-31, 2012, Luminy, Marseille, France.
Title: A Banach space with rich spreading model structure.
 - 14th Panhellenic Conference on Mathematical Analysis, May 18-19, 2012, Patras, Greece.
Title: A reflexive Banach space with the hereditary invariant subspace property.
 - Banach Space Theory Workshop, March 4-9, 2012, Banff, Alberta, Canada.
Title: Hereditarily α -universal Banach spaces.
- EVENT PARTICIPATION
- Metric Spaces: Analysis, Embeddings into Banach Spaces, Applications, July 5-9, 2016, College Station, Texas, USA.
 - Banach Spaces: Geometry and Analysis - A conference in memory of Joram Lindenstrauss, May 26-31, 2013, Jerusalem, Israel.
 - Second Summer School on Operator Theory, July 23-28, 2012, Samos, Greece.
 - Summer School on Operator Theory, July 25-30, 2011, Chios, Greece.
- EVENT ORGANIZATION
- Coorganizer, Concentration Week on Ideals and Algebras of Operators on Banach Spaces, July 24-28, 2023, College Station, TX, USA.
 - Coorganizer, AMS Fall Sectional Meeting - Special Session on Banach Spaces and Applications, September 9-10, 2017, Denton, TX, USA.
 - Coordinator, Texas A&M Banach spaces seminar, Fall 2016-Spring 2017.
- OUTREACH SERVICE
- Monthly Texas A&M Undergraduate Math Club Meeting, October 17, 2016, College Station, Texas, USA.
Lecture: A fundamental theorem of Ramsey.
 - Math Grad School Panel hosted by Club Infinity, York University, September 15, 2022, Toronto, Ontario, Canada.
Panel member.
- COMMITTEE SERVICE
- Department of Mathematics and Statistics, York University.
- Chair of the Pure Mathematics Hiring Committee (7/2022-7/2023).
 - Member of the PhD Committee (7/2022-7/2025).
 - Member of the MA Admissions Committee (7/2021-7/2023).
 - Member of the Tenure and Promotion Adjudicating Committee of the Pure Mathematics Section (1/2022-1/2023).
 - Member of the Pure Mathematics Curriculum Committee (7/2020-12/2023).
 - Member of the Department Web Committee (7/2020-12/2021).
- Faculty of Science, York University.
- Member of the Faculty of Graduate Studies Adjudication Committee - NSERC CGSM Masters (9/2021-7/2022).
 - Member of the Faculty of Science Committee on Equity, Diversity & Inclusivity (8/2021-07/2022).
- PEER REVIEWING
- Reviewer, Banff International Research Station, since 2021.
 - Reviewer, Polish National Science Centre, since 2021.
 - Reviewer, Canadian Mathematical Bulletin, since 2021.
 - Reviewer, Journal of the London Mathematical Society, since 2017.

- Ad hoc reviewer, National Science Foundation, since 2017.
- Referee, Journal of Mathematical Analysis and Applications, since 2020.
- Referee, Journal of the European Mathematical Society, since 2020.
- Referee, Transactions of the American Mathematical Society, since 2019.
- Referee, Illinois Journal of Mathematics, since 2019.
- Referee, Studia Mathematica, since 2019.
- Referee, Involve, since 2017.
- Referee, Mathematics and Mechanics of Complex Systems, since 2017.
- Referee, Advances in Mathematics, since 2016.
- Referee, Journal of Functional Analysis, since 2016.
- Referee, Proceedings of the AMS, since 2016.
- Referee, International Journal of Mathematics, since 2015.

TEACHING
EXPERIENCE

Courses taught at York University.

- Functional Analysis II (MATH 6462) (graduate course).
Winter 2023, Section M.
- Algebra I (MATH 3021).
Fall 2022, Section A.
- Reading Course in Metric Spaces (MATH 4300).
Summer 2022.
- Complex Variables (MATH 3410).
Winter 2022, Section M.
- Introduction to Sets and Logic (MATH 1190).
Fall 2022, Section A, Winter 2022, Section M.
- Topology I (MATH 4081 & 6540) (joint undergraduate and graduate course).
Fall 2021, Section A.
- Functional Analysis I (MATH 6461) (graduate course).
Winter 2021, Section M.
- Differential Calculus with Applications (MATH 1300).
Winter 2021, Section M.
- Tutorial Leader for Differential Calculus with Applications (MATH 1300).
Fall 2020, Sections A and D.

Courses taught at the University of Illinois at Urbana-Champaign.

- Functional Analysis (Math 541) (graduate course).
Spring 2020, Section E1.
- Banach Spaces (Math 547) (graduate course).
Fall 2019, Section F1.
- Differential Equations (Math 285).
Spring 2019, Sections E1 and F1.
- Introduction to Discrete Mathematics (Math 213).
Spring 2020, Section F1.
Fall 2018, Section D1.

Courses taught at Texas A&M University.

- Linear Algebra (Math 304).
Spring 2018, Section 505.
Fall 2017, Sections 502 and 504.
- Differential Equations (Math 308).
Spring 2017, Section 524.
Fall 2016, Sections 508 and 514.
- Advanced Calculus I (Math 409).
Spring 2016, Section 502.
- Engineering Mathematics III (Math 251).
Fall 2015, Sections 504 and 513.

Teaching assistant/lecturer at the National Technical University of Athens.

- Functional Analysis (undergraduate course).
Fall semesters 2012-13, 2013-14 and 2014-15.
- Real Analysis (undergraduate course).

Spring semesters 2012-13 and 2013-14.

- Probability Theory (joint undergraduate and graduate course).
Fall semester 2012-13.
- Measure Theory (graduate course).
Spring semester 2011-12.
- Functional Analysis (graduate course).
Fall semester 2011-12.