Matías Raja

Curriculum Vitae

PERSONAL DETAILS

Address	Department of Mathematics Universidad de Murcia Campus de Espinardo 30100 Murcia, SPAIN
Phone	(+34) 868884166
Mail	matias@um.es

EDUCATION

Ph.D. in Mathematics 1998/1999

Université Bordeaux 1 / Universidad de Murcia

Thesis title: Borel measurability and renorming in Banach spaces.

Degree in Mathematics 1989-1994

Universidad de Murcia

Spanish title *Licenciatura* in Fundamental Mathematics.

EMPLOYMENT

Full Professor 2021-present

Universidad de Murcia, Full-time

Teaching and research in the area of Mathematical Analysis.

Associate Professor 2002-2021

Universidad de Murcia, Full-time

Teaching and research in the area of Mathematical Analysis.

Assistant Professor 1997-2002

Universidad de Murcia, Part-time

Subjects related to Mathematical Analysis and Applied Mathematics.

LANGUAGES

Spanish (mother tongue)
English (fluent)
French (fluent)
Italian (basic)

ADMINISTRATION AND ORGANISATION

Secretary of Department 2009-2013
Departamento de Matemáticas
Universidad de Murcia

Principal Investigator 2022-2025
Research grant MCIN PID2021- 122126NB-C32
Funded €139.150,00 – duration 4 years

Principal Investigator 2018-2021
Research grant MINECO MTM2017-83262-C2-2-P
Funded €71.753,00 – duration 4 years

Principal Investigator 2015-2017
Research grant MINECO MTM2014-57838-C2-1-P
Funded €82.280,00 – duration 3 years

Organiser of scientific meeting 2018
XVI Encuentros de Análisis Funcional Murcia - Valencia
https://www.um.es/beca/xvieafmv/

Organiser of scientific meeting 2016
ALEL2016 International Conference in Optimization Theory and its Applications
http://www.um.es/beca/alel2016/

Organiser of scientific meeting 2016
IV Workshop in Functional Analysis of Murcia
http://www.um.es/beca/workshop2016/

Organiser of scientific meeting 2013
Parallel session RSME Congress, Santiago de Compstela
http://www.usc.es/congresos/rsme2013/docs/abstracts/sesion-07.pdf

FOREIGN STAYS[1]

University College London 1995
PhD Student, May/June
advisor: John Jayne

University of Bordeaux 1996/97
PhD Student, all the academic year
advisor: Robert Deville

Hebrew University of Jerusalem 2003/04
Postdoc Student, October/January + April
advisor: Joram Lindenstrauss

Université de Franche-Comté 2018
Research Stay, March/June
responsible: Gilles Lancien

[1] AT LEAST ONE MONTH LONG

DOCTORAL ADVISING

Simone Ferrari 2013
Localization techniques for renorming
Università degli Studi di Milano

Luis C. García Lirola 2017
Convexity, Optimization and Geometry of the Ball in Banach Spaces
Universidad de Murcia

Guillaume Grelier 2022
Super weak compactness and its applications to Banach space theory
Universidad de Murcia

PAPERS

1. Subspaces of Hilbert-generated Banach spaces and the quantification of super weak compactness. *J. Funct. Anal.* 284 (2023), 109889, 19 pp. (with G. Grelier)

2. Non linear aspects of super weakly compact sets. *Ann. Inst. Fourier* 72 (2022), 1305–1328 (with G. Lancien)

3. Uniformly convex functions. J. Math. Anal. Appl. 505 (2022), Issue 1, 125442, 25 pp. (with G. Grelier).

4. Uniformly convex renormings and generalized cotypes. *Adv. Math.* 383 (2021), 107679, 23 pp. (with L.C. García Lirola).

5. Generalized metric properties of spheres and renorming of Banach spaces. *RACSAM* 113 (2019), no. 3, 2655–2663 (with S. Ferrari and J. Orihuela).

6. Asymptotic and coarse Lipschitz structures of quasi-reflexive Banach spaces. *Houston J. Math.* 44 (2018), 927–940 (with G. Lancien)

7. Maps with the Radon-Nikodym property. *Set-Valued Var. Anal.* 26 (2018), 77–93. (with L.C. García Lirola)

8. On strong asymptotic uniform smoothness and convexity. Rev. Mat. Complut. 31 (2018), 131–152. (with L.C. García Lirola)

9. Compact convex sets that admit a lower semicontinuous strictly convex function. *J. Convex Anal.* 24 (2017), 987–998. (with L.C. García Lirola and J. Orihuela)

10. A Bourgain-like property of Banach spaces with no copies of c_0. *RACSAM* 111 (2017), 205-211. (with A. Pérez).

11. Szlenk index of convex hulls. *J. Funct. Anal.* 272 (2017), 498–521. (with G. Lancien and T. Prochazka).

12. Lipschitz subspaces of $C(K)$. *Topology Appl.* 204 (2016), 149–156. (with N. Jonard).

13. Super WCG Banach spaces. *J. Math. Appl.* 439 (2016), no. 1, 183–196.

14. Weakly metrizabilty of spheres and renorming of normed spaces. *Q. J. Math.* 67 (2016), no. 1, 15–27. (with S. Ferrari and J. Orihuela).

15. Metrization theory and the Kadec property. *Banach J. Math. Anal.* 10 (2016), no. 2, 281–306. (with S. Ferrari, L. Oncina, and J. Orihuela).

16. Conditionality constants of quasi-greedy bases in super-reflexive Banach spaces. *Studia Math.* 227 (2016), no. 2, 133–140. (with F. Albiac, J.L Ansorena, G. Garrigós and E. Hernández).

17. Finite slicing in superreflexive Banach spaces. *J. Funct. Anal.* 268 (2015), no. 9, 2672–2694.

18. Two applications of smoothness in $C(K)$ spaces. *Studia Math.* 225 (2014), no. 1, 1–7.

19. Radon-Nikodým indexes and measures of weak noncompactness. *J. Funct. Anal.* 267 (2014), no. 10, 3830–3858. (with B. Cascales and A. Pérez)

20. On asymptotically uniformly smooth Banach spaces. *J. Funct. Anal.* 264 (2013), no. 2, 479–492.

21. Scalar boundedness of vector-valued functions. *Glasg. Math. J.* 54 (2012), no. 2, 325–333. (with J. Rodríguez).

22. Compact spaces of Szlenk index ω. *J. Math. Anal. Appl.* 391 (2012), no. 2, 496–509.

23. On weak* uniformly Kadec-Klee renormings. *Bull. Lond. Math. Soc.* 42 (2010), no. 2, 221–228.

24. Continuity at the extreme points. *J. Math. Anal. Appl.* 350 (2009), no. 2, 436–438.

25. Finitely dentable functions, operators and sets. *J. Convex Anal.* 15 (2008), no. 2, 219–233.

26. Dentability indices with respect to measures of non-compactness. *J. Funct. Anal.* 253 (2007), no. 1, 273–286.

27. Distance to spaces of continuous functions. *Topology Appl.* 153 (2006), no. 13, 2303–2319. (with B. Cascales and W. Marciszewski).

28. On the dentability of weak*-$\mathcal{H}_\delta$ sets. *Q. J. Math.* 56 (2005), no. 3, 377–382.

29. Embedding ℓ_1 as Lipschitz functions. *Proc. Amer. Math. Soc.* 133 (2005), no. 8, 2395–2400.

30. Descriptive compact spaces and renorming. *Studia Math.* 165 (2004), no. 1, 39–52. (with L. Oncina).

31. Bounded tightness for weak topologies. *Arch. Math.* (Basel) 82 (2004), no. 4, 324–334. (with B. Cascales).

32. Borel properties of linear operators. *J. Math. Anal. Appl.* 290 (2004), no. 1, 63–75.

33. Descriptive properties of spaces of signed measures. *Acta Univ. Carolin. Math. Phys.* 44 (2003), no. 2, 79–88. (with O. Kalenda)

34. First Borel class sets in Banach spaces and the asymptotic-norming property. *Israel J. Math.* 138 (2003), 253–270.

35. Measurable selectors for the metric projection. Math. Nachr. 254/255 (2003), 27–34. (with B. Cascales).

36. Weak* locally uniformly rotund norms and descriptive compact spaces. *J. Funct. Anal.* 197 (2003), no. 1, 1–13.

37. On some class of Borel measurable maps and absolute Borel topological spaces. *Topology Appl.* 123 (2002), no. 2, 267–282.

38. On dual locally uniformly rotund norms. *Israel J. Math.* 129 (2002), 77–91.

39. Locally uniformly rotund norms. *Mathematika* 46 (1999), no. 2, 343–358.

40. On topology and renorming of Banach space. *C. R. Acad. Bulgare Sci.* 52 (1999), no. 3-4, 13–16.

41. Kadec norms and Borel sets in a Banach space. *Studia Math.* 136 (1999), no. 1, 1–16.

BOOKS

1. Análisis Funcional, Ediciones Electolibris 2012 (reprint 2018), 373 pages (with B. Cascales, J.M. Mira and J. Orihuela).

2. Two chapters: Banach spaces I, Banach spaces II, in *Encyclopedia of General Topology*, Edited by K.P. Hart, J. Nagata, J.E. Vaughan. pp. 449 - 458. North-Holland, 2003. (with B. Cascales, I. Namioka and J. Orihuela)

3. Métodos estadísticos en biomedicina, *Curso de preparación BIR*, Ilustre Colegio Oficial de Biólogos de la Región de Murcia, 222 pages, ISBN 978-84-09-39983-3. (editor, with G. Luengo, L. Sáenz-Mateos)