Joan Bosa   Curriculum Vitae

Email: jbosa@unizar.es   http://personal.unizar.es/jbosa

Associate Professor in Mathematics, Universidad de Zaragoza.

 ## Personal Details

Born: February 4, 1985 in Lleida, Spain.
Home adress: Avda. Garrigues 27 , (25001) LLeida, Spain.
Phone Number: (+34) 651 54 96 16 .
Work adress: Off. 217, Dpto. Matematicas, Universidad de Zaragoza, C/Pedro
Cerbuna 12 (50009) Zaragoza, Spain.
Email adress: jbosa@unizar.es

 ## Research/Teaching jobs

Sep. 2023/ Actual	**Associate Professor** in Mathematics (Algebra), *Universidad de Zaragoza*.
Sep. 2021/ Sep. 2023	**Lecturer** in Mathematics (Algebra), *Universidad de Zaragoza*.
Apr. 2019/ Sep. 2021	**Beatriu de Pinós Fellow**, working with Prof. Pere Ara from *Universitat Autònoma de Barcelona*.
Oct. 2017/ Apr. 2019	**Juan de la Cierva-Incorporación Fellow**, working with Dr. Pere Ara and Dr. Francesc Perera from *Universitat Autònoma de Barcelona*.
Oct. 2015/ Sep. 2017	**Beatriu de Pinós Fellow**, working with Dr. Joachim Zacharias and Dr. Stuart White from *Univesity of Glasgow*.
Jun. 2015/ Oct. 2015	**Associate Research Fellow**, working with Prof. Aidan Sims and As. Prof. David Pask from *Univesity of Wollongong* and As. Prof. Roozbeh Hazrat from University West of Sydney.
Set.2013/ Jun.2015	**Research Associate**, working with Dr. Joachim Zacharias and Dr. Stuart White from *Univesity of Glasgow*. Part of EPSRC Grant EP/601419/2.

 ## Habilitations

Dec. 2022	**Acreditación de investigación I3**. Accreditation as researcher I3 (in Mathematics) awarded by Ministry of Universities, Spanish Governement.
Jun. 2021	**Acreditación de Profesor Titular (ANECA)**. Accreditation as Profesor Titular de Universidad (rama Ciencias) awarded by Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA).

Oct. 2018	**Acreditació de Recerca (AQU)**. Accreditation as a Researcher (Agregat) awarded by Agència de Qualitat Universitària de la Generalitat de Catalunya.
Mar. 2017	**Acreditación de Contratado Doctor (ANECA)**. Accreditation as Contratado Doctor (includes Ay.Doctor and Prof. Univ. Privada) awarded by Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA).
Oct. 2015	**Acreditació de Lector (AQU)**. Accreditation as Lector awarded by Agència de Qualitat Universitària de la Generalitat de Catalunya (AQU).

Education

Set. 2017	**Master Degree in Secondary School Training (Mathematics)**, *Universidad Nacional de Educación a Distancia (UNED)*.
Set. 2013	**PhD diploma in Mathematics**, *Universitat Autònoma de Barcelona*. Advisor: Dr. Francesc Perera *Topic: Continuous Fields and the Cuntz semigroup*
Set. 2009	**Master Degree in Advanced Mathematics**, *Universitat Autònoma de Barcelona*. Advisor: Dr. Francesc Perera
June 2008	**Bachelor Degree (Licenciado, equivalent to first class honours) in Science (Mathematics)**, *Universitat Autònoma de Barcelona*.

Papers and Preprints

■ Papers in peer-reviewed Journals

  ■ Published:

- **The Type Semigroup, Comparison and Almost finiteness for ample groupoids.** Ergodic Theory and Dynamical Systems, **43 (2), (2023)**, 361-400. doi:10.1017/etds.2021.115.(joint work with P. Ara, C. Bonicke and K. Li)

- **Stable elements and Property (S).** J. of Mathematical Analysis and Applications, **512-2 (2022)**, 17pp. doi.org/10.1016/j.jmaa.2022.126171.

- **The nuclear dimension of $\mathcal{O}_\infty$-stable C*-algebras.** Adv. in Mathematics, **401 (2022)** 108250, 51pp. doi.org/10.1016/j.aim.2022.108250. (joint work with J. Gabe, A. Sims and S. White)

- **The Groupoids of Adaptable Separated Graphs and their Type Semigroup,** International Mathematics Research Notices (IMRN), Vol 2021, **20, (2021)** pp 15444-15496. (joint work with ith P. Ara, E. Pardo and A. Sims)

- **The realization problem for finitely generated refinement monoids**. Selecta Math. (N.S.), **26 (2020)**, no. 3, Paper No. 33, 63 pp. (joint work with P. Ara and E. Pardo)

- **Strict Comparison for C*-algebras arising from Almost finite groupoids**. Banach J. of Mathematical Analysis, **14 (2020)**, no. 4, 1692–1710 (joint work with P. Ara, C. Bonicke and K. Li)

- **Refinement monoids and adaptable separated graphs.** Semigroup Forum **101 (2020)**, no. 1, 19–36. (joint work with ith P. Ara and E. Pardo)

- **The Bivariant Cuntz Semigroup**. Journal of Functional Analysis, **277 (2019)**, num. 4, pp. 1061-1111. (joint work with G. Tornetta and J. Zacharias)

- **Dimension and Classification by traces**. Memoirs of the American Mathematical Society, **257 (2019)**, num 1233, 97 pp (joint work with N. Brown, Y. Sato, A. Tikuisis, S. White, W. Winter)

- **The failure of the Corona Factorization Property for the Villadsen algebra** $\mathcal{V}_\infty$. Mathematica Scandinavica, **123-1 (2018)**, pp 142-146 (joint work with M. Christensen)

- **Comparison properties of Cu-semigroups, with application to C*-algebras**. Canadian Journal of Mathematics, **70 (2018)**, no.1, pp 26-52. (joint work with H. Petzka)

- **Open Projections and suprema in the Cuntz semigroup**. Mathematical Proceedings Cambridge Philosophical Society, **164 (2018)**, no.1, pp 135-146 (joint work with G. Tornetta and J. Zacharias)

- **Reconstruction of Graded Groupoids from Graded Steinberg Algebras**. Forum Mathematicum, **29 (2017)**, no.5, pp 1023-1037. (joint work with P. Ara, R. Hazrat, A. Sims)

- **Local Triviality for Continuous Field of C*-algebras**. International Mathematics Research Notices (IMRN), **4 (2015)** (joint work with M. Dadarlat)

- **Geometric structure of dimension functions on certain continuous fields**. J. Funct. Anal., **266 (2014)**, no.4, pp.2403-2423. (joint work with R. Antoine, F. Perera and H. Petzka)

- **The Cuntz semigroup of Continuous Fields of C*-algebras**. Indiana Univ. Math. J., **62 (2013)**, no.4, pp.1105-1131. (joint work with R. Antoine and F. Perera)

- **Completions of monoids with applications to the Cuntz Semigroup**. International Journal of Mathematics, **22(6)(2011)**, pp.837-861. (joint work with R. Antoine and F. Perera)

■ Preprints

July 2023   **The Cuntz semigroup of a ring**. Preprint. 43pp (joint work with R. Antoine, P. Ara, F. Perera and E. Vilalta)

May. 2019   **Classifying Tracially Factorizable Maps from Nuclear Cones**. Preprint. 17pp (joint work with A. Tikuisis and S. White)

Teaching and Supervision Duties

■ Universidad de Zaragoza

■ Supervision

2022/23   **TFG -** C*-algebras y Teoría K
Student : Diego Miguelena

2021/22   **TFG -** The Gelfand's representation theorem for abelian C*-algebras.
Student : Jacobo Reyes

Teaching

Sep. 2021/ Feb. 2022	**Números y Conjuntos** Universidad de Zaragoza (Theory and Problem sessions, First year, Mathematics Studies, First term).
Feb. 2022/ Jun. 2023	**Matemática Discreta** Universidad de Zaragoza (Theory and Problem sessions, First year, Computer Sciences Studies, Second term).
Sep. 2021/ Feb. 2023	**Linear Algebra** Universidad de Zaragoza (Problem sessions, First year, Mathematics Studies and Physics Studies, first term).

Universitat Autònoma de Barcelona and UNED

Ph.D - Supervision

Sep. 2017 Apr.2022	**Co-supervision the Ph.D student Alvaro Sanchez** at Universitat Autònoma de Barcelona jointly with Prof. P. Ara.

Teaching

Feb. 2021/ Jun. 2021	**Àlgebra** Universitat Autònoma de Barcelona (Theory and Problem sessions, First year, Telecomunications Engineering Studies, Second term).
Sep. 2018/ Feb. 2021	**Càlcul** Universitat Autònoma de Barcelona (Problem sessions, First year, Data Science Engineering Studies, First term).
Feb. 2018/ Jun. 2019	**Càlcul** Universitat Autònoma de Barcelona (Problem sessions, First year, Informatics Engineering Studies, Second term).
Feb. 2020/ Jun. 2020	**Càlcul en diferents variables** Universitat Autònoma de Barcelona (Problem sessions, First year, Mathematics and Data Science Studies, Second term).
Sep. 2017/ Feb. 2021	**Analisis una variable** UNED (Problem sessions, First year, Advanced Studies of Mathematics, First term).
Feb. 2018/ Jun. 2020	**Analisis compleja** UNED (Problem sessions, First year, Advanced Studies of Mathematics, Second term).
Sep. 2017/ Feb. 2021	**Calculo** UNED (Problem sessions, First year, Telecommunication Engineering Studies, Second term).
Sep. 2018/ Feb. 2020	**Estadística** UNED (Problem sessions, First year, Environmental sciences, First term).
Feb. 2018/ Jun. 2019	**Estadística y Probabilidad** UNED (Problem sessions, First year, Telecommunication Engineering Studies, Second term).
Sep. 2017/ Feb. 2018	**Matemáticas Avanzadas para la Economia** UNED (Problem sessions, Second year, Economics Studies, First term).
Mar. 2013/ Jul. 2013	**Algebraic Structures** (Problem sessions, Second year, Mathematics Studies, Second term
2012 / 2013	**Linear Algebra** (Problem sessions, First year, Nanotechnology Studies, Second term)
Set. 2011/ Feb. 2012	**Mathematics** (Problem sessions, First year, Science and Food Technology Studies, First term)

At Glasgow University

Supervision

Oct. 2013/ Apr. 2016	Help on **supervision the Ph.D student Gabriele N. Tornetta** at University of Glasgow jointly with Dr. J. Zacharias.

■ Teaching

Sep. 2016/ Mar. 2017	**SMSTC-Analysis** (Problem sessions, measure theory and Functional Analysis, course for Msc Students and first year Ph.D-students, First-Second term).
Sep. 2016/ Dec. 2016	**Lectures 1X** (Lectures and Problem sessions, First year, Advanced Studies of Mathemtatics, First term).
Jan. 2016/ Mar. 2016	**Lectures 1Y** (Lectures and Problem sessions, First year, Mathematics Studies, Second term).
Jan. 2015/ Mar. 2015	**Tutorials 1S** (Problem sessions, First year, Mathematics Studies, Second term).
Sep. 2014/ Sep. 2016	**Lectures 1X** (Lectures and Problem sessions, First year, Advanced Studies of Mathemtatics, First term).
Sep. 2013	**Tutorials 1X,1Y** (Problem sessions, First year, Advanced Studies of Mathematics, First-Second term).
Sep. 2013/ Mar. 2014	**Tutorials 1R, 1S** (Problem sessions, First year, Mathematics Studies, First-Second term).

Grants and Awards

Apr. 2019/ Apr. 2021	**Beatriu de Pinos Fellowship**. Fellowship cofunded by AGAUR (Catalunya) and by the European Union by means of the Marie Curie cofund (FP7) under the framework program Horizon 2020 to hire researchers by excellence programs that foster of transnation mobility. Award of 86.000€.
Nov.2017/ Nov. 2019	**Juan de la Cierva-Incoporación**. Fellowship funded by Ministerio Educación y Ciencia (Spanish Government) to promote junior excellent researchers. Award of 64.000 €.
Oct. 2015/ Oct. 2017	**Beatriu de Pinos Fellowship**. Fellowship cofunded by AGAUR (Catalunya) and by the European Union by means of the Marie Curie cofund (FP7) to outstanding junior excellent researchers. Award of 75.200 €.
June 2016	**"Premio extraordinario de doctorado"**, prize awarded to the most outstanding PhD-thesis in Mathematics during 2013, Universitat Autònoma de Barcelona.
Set. 2013	**PhD diploma** in Mathematics (Algebra) with the **maximum qualification** (Cum Laude)
Apr. 2012	**Ferran Sunyer i Balaguer Prize**. It was awarded by Catalan Mathematical Society to fund me to the stay at Purdue University.
Apr. 2010	**Évariste Galois Prize**. It was awarded by Catalan Mathematical Society to the reseach work **Complecions de semigrups: aplicacions al semigrup de Cuntz**.
June 2008	**"Premio extraordinario de fin de carrera"**, prize awarded to the most outstanding graduate in Mathematics, Universitat Autònoma de Barcelona.

Participation Research Projects

2023/2025	**C*-algebras and Dynamical Systems (CADS)**, Programa Consolidación Investigadora, Ministry of Science and Research, CNS2022-135340 , IP: Joan Bosa. 171.000 Eur.

2023/2025	**Grupo de investigacíon Álgebra y Geometria**, núm. E22_23R, Dep. Ciencia, Universidad y sociedad del conocimiento (Aragón) , PID2020-113047GB-I00, IP: Concepción Martínez, Miguel Á. Marco, 60.000 Eur.
2021/2024	**Anillos, Modulos, C*-álgebras y Dinamica : Clasificación, estructura fina y regularidad**, M. Ciencia y Innovación, PID2020-113047GB-I00, IP: Pere Ara , Francesc Perera. 75.000 Eur.
2019/2021	**Beatriu de Pinós mod. A**, AGAUR-Generalitat de Catalunya, 2017 BP 00079, IP: Joan Bosa. 6.000 Eur.
2018/2020	**Laboratori d'Interaccions entre Geometria, Àlgebra i Topologia (LI-GAT)**, Grup de Recerca reconegut I Finançat per la Generalitat de Catalunya, 2017 SGR 1725, IP: Carles Broto Blanco. 44.480 Eur.
2018/2021	**Estructura y clasificacion de anillos, modulos y C*-algebras: Interacciones en Dinamica, Combinatoria y topologia,**, DGI MEC-FEDER, MTM2017-83487-P, IP: Pere Ara Bertran. 58.700 Eur.
2015/2017	**Estructura y clasificacion de anillos, modulos y C*-algebras**, DGI MEC-FEDER, MTM2014-53644-P, IP: Pere Ara Bertran. 85.063 Eur.
2012/2015	**The Cuntz semigroup and the Fine structure of Nuclear C*-algebras**, EPSRC, EP/601419/2, IP: Joachim Zacharias. 302,171 Pounds.
2011/2014	**Estructura de Anillos, C*-algebras y categorias de modulos**, DGI MEC-FEDER, MTM2011-28992-c02-01, IP: Pere Ara Bertran. 118.338 Eur.
2009/2011	**Estructura y Clasificación de Anillos, modulos y C*-algebras**, DGI MEC-FEDER, MTM2008-0631-C02-01/MTM, IP: Pere Ara Bertran. 94.138 Eur.

Research Stays

Mar.-Aug. 2017	**Centre de Reserca Matemàtica.** Senior researcher invitation during the IRP Operator Algebras: Dynamics and Interactions.
Feb. 2016	**Institut Mittag-Leffler.** Senior researcher invitation during the Classification of Operator algebras: Complexity, Rigidity, and Dynamics Programme.
April-May 2015	**University of Muenster.** Visiting researcher during the Focus Programme on C*-Algebras.
June 2014	**Fields Institute of Toronto.** Visiting researcher during the Theme Period on C*-Algebras and Dynamical Systems.
Set.2012-Dec.2012	Visitor at **Purdue University,** under the supervision of Prof. Marius Dadarlat.
Jan.2010-Ap.2010	Visitor at **University of Copenhagen,** under the supervision of Prof. Mikael Rordam.

Organization of conferences and scientific events

2018 / 2023	Part of the organization team of **"DITMAE"** and **"DiMatLleida"**. A mathematical activity addressed to secondary school students organized by Fundació Ferran Sunyer i Balaguer (Soc. Catalana de Matemàtiques).
Sep. 2023	Coordinator of the Conference **"OA-session in Spanish-Polish Mathematical meeting"**, Lodz, Poland. (jointly with S. Goldstein, B. Kwaniewski, F. Perera, M. Wasilewski).

Jan. 2023	Coordinator of the Conference **" III Barcelona Weekend on Operator Algebras and Noncommutative Algebra"**, Centre de Recerca Matemàtica (jointly with R. Antoine, F. Perera).
Sep. 2019	Coordinator of the Conference **" II Barcelona Weekend on Operator Algebras and Noncommutative Algebra"**, Centre de Recerca Matemàtica (jointly with F. Perera).
Jun. 2019	Coordinator of the Conference **" 2nd BMS-BGSMath Junior Meeting"**, TU Berlin & Institute Berlin (ZIB) (jointly with M. Gonchenko and M. Sanz-Solé).
Nov. 2018	Coordinator of the Conference **"Barcelona Weekend on Operator Algebras"**, Centre de Recerca Matemàtica (jointly with F. Perera).
Since Feb. 2018	Coordinator of the **Rings Theory seminars** at Universitat Autònoma de Barcelona
Jan. 2014 - Jan. 2015	Coordinator of the **Operator Algebra** seminars at University of Glasgow
1/5-Set. 2014	Coordinator of the Conference **"Classification, Structure, Amenability and Regularity (CStAR)"**, University of Glasgow (jointly with S.White, W. Winter, J. Zacharias).
25/29-Aug. 2014	Coordinator of the Master Class **"Classification, Structure, Amenability and Regularity (CStAR)"**, University of Glasgow (jointly with S.White, W. Winter, J. Zacharias).
14/23-June 2011	Coordinator of the Advanced Course **"Dynamics and Classification"**, CRM-Centre de Recerca Matemàtica (Bellaterra), (jointly with R. Antoine, P. Ara, F. Perera).
6/10-June 2011	Coordinator of the Conference **"Structure and Classification of C*-algebras"**, CRM-Centre de Recerca Matemàtica (Bellaterra), (jointly with R. Antoine, P. Ara, F. Perera).
6/8-April 2011	Coordinator of the workshop **"Workshop on Dynamics and C*-algebras"**, CRM-Centre de Recerca Matemàtica (Bellaterra), (jointly with R. Antoine, P. Ara, F. Perera).

Conferences and Talks - Summary (last years)

Advanced Courses

Dec. 2016	**The Cuntz semigroup: Classification of C*-algebras**, a series lectures of 5 hours presented at "The 4th Workshop on Operator Algebras and its applications", School of Mathematics, IPM, Tehran, Iran.

Communications

Sep 2023	**Classification of C*-algebras. History and Final results**, presented at joint meeting RSME, SCM and Polish Math Society. University of Lodz (Poland).
May 2023	**Almost Elementary C*-algebras**, presented at workshop C*-days 2023, University of Prague (Czech Republic).
Oct. 2022	**Stable Elements and property (S)**, presented at workshop Cuntz Semigroup 2022, University of Kiel (Germany).
May. 2022	**Almost Elementary Dynamical Systems**, presented at workshop C*-algebras: Structure and dynamics (Sde Boker (Israel)).

Jun. 2020	**The Realization problem for von Neumann regular rings**, presented at Zagreb Workshop on Operator Algebras (on-line).
May 2019	**Adaptable Separated graphs and Realization problem**, presented at "Advanced Course on Geometry, Topology and Algebra", Centre de Recerca Matemàtica, Bellaterra, Spain
Mar. 2019	**Nuclear dimension of O_∞-stable C*-algebras**, presented at "School I-Operator Algebras, Groups and applications to Quantum Information", ICMAT, Madrid, Spain
Dec. 2018	**Classification of C*-algebras and Nuclear dimension of O_∞-stable C*-algebras**, presented at "Joint meeting Spain-Brazil in Mathematics", University of Cadiz, Cadiz, Spain
Oct. 2017	**Villadsen Algebras and some regularity conditions**, presented at "Masterclass: Applications of the UCT for C*-algebrass", University of Copenhagen, Copenhagen.
Aug. 2017	**The dynamical Cuntz Semigroup**, presented at "Young Mathematicians working on C*-algebras", University of Copenhagen, Coopenhagen.
Mar. 2017	**The dynamical Cuntz Semigroup**, presented at "Workshop C*-algebras and Dynamical Systems", Centre de Recerca de Matemàtiques, Barcelona.
Jun. 2016	**Classification of C*-algebras. Comparison Properties of the Cuntz Semigroup and applications to C*-algebras**, presented at Special week on Operator Algebras, Research Center of Operator Algebras, East China Normal University, Shanghai, China.
Feb. 2016	**Comparison Properties of the Cuntz Semigroup and applications to C*-algebras**, presented at Mittag-Leffler institute, Stockholm, Sweden.

■ Seminar Talks

Jun. 2022	**The realization problem for von Neumann regular rings**, Algebra and Number Theory seminar, presented at University of Graz.
Feb. 2022	**Clasificación de C-álgebras separables simples unitales y nucleares. Historia y resultados importantes**, Rubio de Francia Seminar, presented at University of Zaragoza.
Jul. 2021	**El Problema de Realització i Grafs separats adaptables**, Seminari G i C, Universitat de Lleida,.
May.2021	**Stable elements and Property (S)**, Seminari Teoria d'Anells, presented at Universitat Autònoma de Barcelona.
Jun. 2020	**The realization problem for von Neumann regular rings**, Western Sydney Abend Seminar, presented at University of Western Sydney (on-line).
Oct. 2019	**Classification of C*-algebras**, GAMT Seminar, presented at University of Cardiff.
Jun. 2019	**Realization for von Neumann regular rings**, Operator Algebra Seminar, presented at University of Trondheim.
Jan. 2019	**Adaptable separated graphs**, Operator Algebra Seminar, presented at University of Glasgow.
Jun. 2018	**Representation problem and Steinberg Algebras**, Rings Theory Seminar, presented at Universitat Autònoma de Barcelona.

May 2018	**Representation problem and Steinberg Algebras**, Operator Algebra Seminar, presented at University of Muenster.
Feb. 2018	**Representation problem and Steinberg Algebras**, Operator Algebra Seminar, presented at University of Glasgow.
Jun. 2017	**Dynamical Cuntz Semigroup**, Operator Algebra Seminar during IRP Operator Algebras, presented at Centre de Recerca Matemàtica.
Oct. 2016	**Reconstruction of graded groupoids from graded Steinberg algebras**, Operator Algebra Seminar, presented at University of Glasgow.
May 2016	**Comparison Properties of the Cuntz Semigroup and applications to C*-algebras**, presented at Universitat Autònoma de Barcelona.
Oct. 2015	**"Classification of C*-algebras and Category Cu"**, Operator Algebra seminar, University of Wollongong.
Feb. 2015	**"Classification of maps by traces"**, Operator Algebra seminar, Newcastle University.
Jan. 2015	**"Classification of maps by traces"**, Operator Algebra seminar, University of Münster.
Jan. 2015	**"Nuclear dimension of Kirchberg Algebras"**, Operator Algebra seminar, University of Glasgow.

References

Prof. Francesc Perera
perera@mat.uab.cat
Department of Mathematics
Universitat Autònoma
de Barcelona
08193 Bellaterra (Barcelona)
PhD Advisor

Prof. Stuart White
Stuart.White@sjc.ox.ac.uk
Mathematical Institute
University of Oxford
Andrew Wiles Building
OX2 6GG, Oxford, UK
Principial Investigator

Prof. Aidan Sims
asims@uow.edu.au
School of Mathematics 39C.152
University of Wollongong
NSW 2522, Australia
Principal Investigator

Dpto. Matematicas, Universidad de Zaragoza, Pedro Cerbuna 12, Zaragoza, 50009, Spain
E-mail address:jbosa@unizar.es