

Iker de las Heras Kerejeta

PERSONAL DATA

AFFILIATION: University of the Basque Country
ADDRESS: Barrio Sarriena s/n, 48940 Leioa, Basque Country
Faculty of Science and Technology, Department of Mathematics
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RESEARCH LINE: Group theory, finite p -groups, pro- p groups, Hausdorff dimension in profinite groups, word problems, conciseness of words, commuting probability

EDUCATION AND POSITIONS

PRESENT APRIL 2024	<i>Assistant Professor</i> University of the Basque Country
APRIL 2024 FEBRUARY 2023	<i>Marie Curie Postdoctoral position</i> Universidade de Brasília, Brazil In collaboration with P. SHUMYATSKY
JANUARY 2023 FEBRUARY 2021	<i>Postdoctoral position</i> Heinrich-Heine-Universität Düsseldorf, Germany In collaboration with B. KLOPSCH
JANUARY 2021 DECEMBER 2020	<i>Teacher and researcher position</i> Heinrich-Heine-Universität Düsseldorf, Germany
OCTOBER 2020 OCTOBER 2017	<i>Ph.D. in Mathematics and Statistics</i> University of the Basque Country Thesis: <i>Some topics on finite p-groups and pro-p groups</i> Advisor: G. FERNÁNDEZ-ALCOBER With honours (Cum laude), international mention
FEBRUARY 2017 OCTOBER 2015	<i>Master's Degree in Mathematics</i> University of Padova, Italy Thesis: <i>Intersections of maximal subgroups in finite solvable groups</i> Advisor: A. LUCCHINI 110/110, cum laude
JUNE 2015 SEPTEMBER 2011	<i>Bachelor Degree in Mathematics</i> University of the Basque Country Thesis: <i>Finite p-Groups</i> Advisor: G. FERNÁNDEZ-ALCOBER Graduated with "Excellence"

TEACHING

JULY 2025 FEBRUARY 2024	<i>Matematika II eta Estatistika</i> University of the Basque Country Degree in Geology 60 teaching hours (6 credits)
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JANUARY 2025 SEPTEMBER 2024	<i>Grupos y Representaciones</i> University of the Basque Country Degree in Mathematics 15 teaching hours (1,5 credits) Mark of the students: 3,7/5
JANUARY 2025 SEPTEMBER 2024	<i>Zenbakizko Metodoak I (Numerical Analysis)</i> University of the Basque Country Degree in Mathematics 96 teaching hours (9,6 credits) Mark of the students: 4,8/5
JULY 2024 APRIL 2024	<i>Algebraic Geometry</i> University of the Basque Country Degree in Mathematics 20 teaching hours (2 credits) Mark of the students: 4,8/5
JULY 2024 APRIL 2024	<i>Matematika II</i> University of the Basque Country Degree in Mathematics 25 teaching hours (2,5 credits) Mark of the students: 4,6/5
FEBRUARY 2021 DECEMBER 2020	<i>Introduction to Lie Algebras</i> Heinrich-Heine-Universität Düsseldorf, Germany Degree in Mathematics
AUGUST 2018 DECEMBER 2017	<i>Analisi Matematiko eta Numerikoa</i> University of the Basque Country Degree in Engineering of Renewable Energies 105 teaching hours (10,5 credits) Mark of the students: 4,3/5
NOVEMBER 2017 SEPTEMBER 2017	<i>Ecuaciones Diferenciales</i> Academia Zilargi, Bilbao Students from Several Engineering Degrees
NOVEMBER 2017 SEPTEMBER 2017	<i>Estadística</i> Academia Zilargi, Bilbao Students from Several Engineering Degrees
JUNE 2017	<i>Intensive Course in C Programming</i> Academia Zilargi, Bilbao

PUBLICATIONS

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|------|---|
| 2025 | <i>Groups with finitely many long commutators of maximal order</i>
Authors: I. DE LAS HERAS, F. DI CONCILIO, P. SHUMYATSKY
ArXiv: 2504.103777 |
| 2025 | <i>Strong conciseness and equationally Noetherian groups</i>
Authors: I. DE LAS HERAS, A. ZOZAYA
ArXiv: 2502.07427 |
| 2025 | <i>The lower p-series of analytic pro-p groups and Hausdorff dimension</i>
Authors: I. DE LAS HERAS, B. KLOPSCH, A. THILLAISUNDARAM
Journal of the London Mathematical Society |

2024	<i>On the lattice of closed subgroup of a profinite group</i> Authors: F. DE GIOVANNI, I. DE LAS HERAS, M. TROMBETTI International Journal of Algebra and Computation
2024	<i>Powerful 3-Engel groups</i> Authors: I. DE LAS HERAS, M. NOCE, G. TRAUSTASON Journal of Pure and Applied Algebra
2024	<i>The degree of commutativity of wreath products with infinite cyclic top group</i> Authors: I. DE LAS HERAS, B. KLOPSCH, A. ZOZAYA European Journal of Mathematics
2023	<i>Strong conciseness of coprime commutators in profinite groups</i> Authors: I. DE LAS HERAS, M. PINTONELLO, P. SHUMYATSKY Journal of Algebra
2022	<i>The finitely generated Hausdorff spectra of a family of pro-p groups</i> Authors: I. DE LAS HERAS, A. THILLAISUNDARAM Journal of Algebra
2022	<i>A pro 2-group with full normal Hausdorff spectra</i> Authors: I. DE LAS HERAS, A. THILLAISUNDARAM Journal of Group Theory
2022	<i>A pro-p group with full normal Hausdorff spectra</i> Authors: I. DE LAS HERAS, B. KLOPSCH Mathematische Nachrichten
2021	<i>Powerfully solvable and powerfully simple groups</i> Author: I. DE LAS HERAS, G. TRAUSTASON Journal of Pure and Applied Algebra
2021	<i>Lower central words in finite p-groups</i> Authors: I. DE LAS HERAS, M. MORIGI Publicacions Matemàtiques
2020	<i>Commutators in finite p-groups with 3-generator derived subgroup</i> Author: I. DE LAS HERAS Journal of Algebra
2019	<i>Commutators in finite p-groups with 2-generator derived subgroup</i> Authors: I. DE LAS HERAS, G. FERNÁNDEZ-ALCOBER Israel Journal of Mathematics
2019	<i>Intersections of maximal subgroups in prosolvable groups</i> Authors: I. DE LAS HERAS, A. LUCCHINI Communications in Algebra

STAYS ABROAD

JULY 2023	<i>Three-month stay</i>
MAY 2023	Basque Center for Applied Mathematics Host: M. EPELDE
MAY 2023	<i>Two-week stay</i>
	University of Naples, Italy Host: M. TROMBETTI

APRIL 2023	<i>Three-month stay</i>
FEBRUARY 2023	University of the Basque Country Host: G. FERNÁNDEZ-ALCOBER
SEPTEMBER 2022	<i>Five-week stay</i> University of Brasilia, Brazil Host: P. SHUMYATSKY
MARCH 2022	<i>Two-week stay</i> University of Salerno, Italy Host: M. NOCE
JANUARY 2020	<i>One-month stay</i> University of Bath, United Kingdom Host: G. TRAUSTASON
NOVEMBER 2019	<i>Two-week stay</i> University of Salerno, Italy Host: M. NOCE
JULY 2019	<i>One-week stay</i> University of Düsseldorf, Germany Host: B. KLOPSCH
MARCH 2019	<i>One-month stay</i> University of Bologna, Italy Host: M. MORIGI
DECEMBER 2018 OCTOBER 2018	<i>Two-month stay</i> University of Padova, Italy Host: A. LUCCHINI

OTHER PUBLICATIONS AND DISSEMINATION

FEBRUARY 2024	<i>Monthly collaborator in the radio show Baipasa</i>
JANUARY 2023	Euskadi Irratia
JUNE 2023	<i>Interview with the Fields Medals winner Efim Zelmanov</i> Campusa (virtual magazine)
2021	<i>Hausdorffen dimentsioa talde profinituetan</i> (publication) Authors: I. DE LAS HERAS, A. ZOZAYA Ekaia (science magazine)
2020	<i>Short talks to young students in the Science Week of Bilbao</i> Euskalduna Jauregia, Bilbao
2019	<i>Ibilaldi matematikoa - Paseo matemático</i> (publication) Authors: M. EPELDE, X. DIEZ, E. DI DOMENICO, I. DE LAS HERAS, M. NOCE, A. ZOZAYA DivulgaMAT (science magazine)

FURTHER EXPERIENCE

	<i>Referee for several journals</i>
NOVEMBER 2017	<i>Internship</i>
MAY 2017	University of the Basque Country Supervisor: G. FERNÁNDEZ-ALCOBER

OCTOBER 2016 JULY 2016	<i>Internship in the Training & Research Unit of the University of the Basque Country</i> University of the Basque Country Supervisor: G. FERNÁNDEZ-ALCOBER
SEPTEMBER 2015 JUNE 2015	<i>Internship in the Training & Research Unit of the University of the Basque Country</i> University of the Basque Country Supervisor: G. FERNÁNDEZ-ALCOBER

SELECTED TALKS

OCTOBER 2024	<i>Conciseness of words and equationally Noetherian groups</i> AGTA - Reinhold Baer Prize (international conference), invited speaker Naples, Italy
JUNE 2023	<i>Hausdorff dimension and Hausdorff spectra in profinite groups</i> AGTA (international conference), invited speaker Lecce, Italy
MAY 2023	<i>Hausdorff dimension and Hausdorff spectra in profinite groups</i> Autonomous University of Madrid , Spain
SEPTEMBER 2021	<i>Powerfully solvable and powerfully simple groups</i> New Trends Around Profinite Groups (international conference) Levico, Italy
JUNE 2021	<i>Powerfully solvable and powerfully simple groups</i> GAGTA (international conference) ICMS, Edinburgh
MARCH 2021	<i>Hausdorff dimension and Hausdorff spectra in profinite groups</i> Ischia Online Group Theory Conference , invited speaker
JANUARY 2020	<i>Hausdorff dimension and Hausdorff spectra in profinite groups</i> University of Lincoln , United Kingdom
NOVEMBER 2019	<i>Lower central words in finite p-groups</i> University of Salerno , Italy
JUNE 2019	<i>Lower central words in finite p-groups</i> Heinrich-Heine-Universität Düsseldorf , Germany
APRIL 2019	<i>Simple commutators in finite p-groups</i> Engel Conditions in Groups (international conference) University of Bath, United Kingdom
NOVEMBER 2018	<i>Commutators in finite p-groups</i> University of Padova , Italy
SEPTEMBER 2018	<i>Commutators in finite p-groups</i> UMI-SIMAI-PTM Joint Meeting (international conference) University of Wrocław, Poland
JUNE 2018	<i>Commutators in finite p-groups</i> XII Encuentro de Teoría de Grupos (international conference) University of Saragossa, Spain
NOVEMBER 2017	<i>Words in groups</i> University of the Basque Country

JUNE 2017	<i>Intersection of maximal subgroups in prosolvable groups</i> GAGTA (international conference) University of the Basque Country
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POSTER PRESENTATIONS

FEBRUARY 2021	<i>Hausdorff dimension and Hausdorff spectra in pro-p groups</i> Ischia Online Group Theory Conference (international conference) University of Salerno, Italy
FEBRUARY 2019	<i>Commutators in finite p-Groups</i> Congreso Bienal de la RSME (international conference) University of Santander, Spain
MARCH 2018	<i>Commutators in finite p-Groups</i> Ischia Group Theory 2018 (international conference) University of Salerno, Italy

COURSES

APRIL 2024	<i>Coherence of one-relator groups</i> University of the Basque Country By: M. LINTON
MAY 2023	<i>Lie ring methods in group theory</i> University of the Basque Country By: P. SHUMYATSKY
NOVEMBER 2021	<i>Conciseness of group words in residually finite groups</i> University of Padova, Italy By: P. SHUMYATSKY
SEPTEMBER 2021	<i>Probabilistic Group Theory</i> University of the Basque Country By: M. VANNACCI
JUNE 2021	<i>Groups, Languages and Automata</i> University of the Basque Country By: M. NOCE
OCTOBER 2019	<i>Introduction to Spectral Sequences</i> University of the Basque Country By: A. DÍAZ RAMOS
MAY 2019	<i>Growth and Relations of Graded Rings</i> Autonomous University of Madrid, Spain By: A. JAIKIN
JANUARY 2019	<i>Small cancellation theory</i> Autonomous University of Madrid, Spain By: D. GRUBER
JANUARY 2019	<i>Nilpotent and solvable groups</i> University of the Basque Country By: G. FERNÁNDEZ-ALCOBER, J. GONZÁLEZ
NOVEMBER 2018	<i>Representation growth</i> University of Padova, Italy By: B. KLOPSCH

MAY 2018	<i>Group-based cryptography</i> University of Salerno, Italy By: D. KAHROBAEI
MARCH 2018	<i>Branch groups</i> University of the Basque Country By: M. NOCE, E. DI DOMENICO, S. GÜL
FEBRUARY 2018	<i>Computational group theory with GAP</i> University of the Basque Country By: U. JEZERNIK and P. MORAVEC

ORGANIZATION OF R&D ACTIVITIES

JUNE 2023	<i>Organiser of the international conference Finite and Residually Finite Groups</i> Bizkaia Aretoa, Bilbao
FEBRUARY 2020	<i>Organiser of the international conference GTA: Gran Bilbao II</i> University of the Basque Country
JULY 2019	<i>Organiser of the international conference yGAGTA</i> University of the Basque Country
JUNE 2019	<i>Organiser of the international conference GTA: Gran Bilbao</i> University of the Basque Country
JUNE 2017	<i>Organiser of the international conference GAGTA</i> Bizkaia Aretoa / University of the Basque Country

GRANTS AND PRIZES

APRIL 2024 FEBRUARY 2023	<i>Maria Skłodowska-Curie postdoctoral fellowship</i> European Commission
SEPTEMBER 2022	<i>Reinhold Baer Prize 2022</i> AGTA association and Aracne publisher International prize for the best Ph.D. thesis / publication in group theory
JANUARY 2023 FEBRUARY 2021	<i>Postdoctoral fellowship</i> Basque Government
JANUARY 2020	<i>Mobility grant for a stay at the University of Bath</i> University of the Basque Country
MARCH 2019	<i>Mobility grant for a stay at the University of Bologna</i> University of the Basque Country
OCTOBER 2020 OCTOBER 2017	<i>Ph.D. fellowship</i> University of the Basque Country
FEBRUARY 2017	<i>Merit-based prize</i> University of Padova
OCTOBER 2016 JULY 2016	<i>Grant of the "Training and Research Unit" for initiation to research</i> University of the Basque Country
SEPTEMBER 2015 JUNE 2015	<i>Grant of the "Training and Research Unit" for initiation to research</i> University of the Basque Country

MEMBERSHIPS

JANUARY 2026	<i>Group Conciseness</i>
FEBRUARY 2023	European Commission (Marie Curie programme), 239.922,72 € Principal investigator: IKER DE LAS HERAS
DECEMBER 2025	<i>Group theory, topology and applications</i>
JANUARY 2022	Basque Government , 338.100,00 € Principal investigator: ILYA KAZACHKOV
JULY 2025	<i>Grupos y geometría II</i>
AUGUST 2021	Ministerio de Ciencia e Innovación , 50.820,00 € Principal investigators: GUSTAVO FERNÁNDEZ, MONTSERRAT CASALS
FEBRUARY 2023	<i>GRK: Algebro-Geometric Methods in Algebra, Arithmetic and Topology</i>
DECEMBER 2020	German Research Foundation (DFG) , 8.425.520,00 € Principal Investigator: STEFAN SCHRÖER
PRESENT	<i>Red ibérica de teoría de grupos</i>
DECEMBER 2020	Ministerio de Ciencia e Innovación , 2.935,99 € Principal Investigator: CONCEPCIÓN MARTINEZ
SEPTEMBER 2021	<i>Grupos y geometría</i>
OCTOBER 2018	Ministerio de Ciencia e Innovación , 46.706 € Principal investigators: GUSTAVO FERNÁNDEZ, JON GONZALEZ
DECEMBER 2021	<i>Groups, topology and applications</i>
OCTOBER 2018	Basque Government , 370.486 € Principal investigator: ILYA KAZACHKOV

LANGUAGES

BASQUE	Mothertongue. Certificate level: C1 Euskararen Gaitasun Agiria (EGA)
SPANISH	Mothertongue
ENGLISH	Fluent. Certificate level: C1 Certificate of the University of the Basque Country
ITALIAN	Fluent. Certificate level: C1 Certificate of the University of Padova
PORTUGUESE	B1 level
GERMAN	A2 level

COMPUTER SKILLS

ADVANCE KNOWLEDGE	\LaTeX , GAP, Mathematica, MATLAB, Octave, C, Python
INTERMEDIATE KNOWLEDGE	C++, Java