

Curriculum Vitae: Colin Davalo

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Background

Postdoc at the Giuseppe Peano Institute, Turin <i>Position funded by the ERC "GENERATE", supervised by Andrea Seppi. Year 2024-2025 spent as a guest at the Institut Fourier, Grenoble.</i>	2024 - 2026
PhD at the University of Heidelberg <i>Supervised by Beatrice Pozzetti, with distinction "Summa cum Laude".</i>	2020 - 2024
Master 2: Analysis, Arithmetic, Geometry at the University of Paris Saclay <i>Master's thesis supervised by Olivier Guichard.</i>	2020
Student at ENS Paris	2017 - 2021
Preparatory classes MPSI/MP*	2015 - 2017

Scientific Production

On Geometric Structures in the Einstein Universe for $SO_0(p, p+1)$-Hitchin Representations (with Parker Evans) <i>preprint</i>	2025
Geometric Structures for G'_2-Surface Group Representations (with Parker Evans) <i>preprint</i>	2025
Anosov deformations of Barbot representations (with Samuel Bronstein) <i>preprint</i>	2025
Finite-Sided Dirichlet domains for Anosov subgroups (with Max Riestenberg) <i>preprint</i>	2024
Geometric structures for maximal representations and pencils <i>Accepted for publication in Forum of mathematics : Sigma</i>	2025
Domains of discontinuity and nearly geodesic immersions <i>Geometry & Topology 29 (2025) 2391–2461</i>	2025
Maximal and Hitchin representations in $Sp(4, \mathbb{R})$ <i>Advances in Mathematics Volume 442, April 2024, 109578</i>	2024
Projective structures with (Quasi-)Hitchin holonomy (with Daniele Alessandrini and Qiongleng Li) <i>Journal of the London Mathematical Society, Volume 110, Issue 4</i>	2024

Theses and Dissertations

Bachelor's Thesis "Almost Periodic Functions" <i>with Balthazar Fléchettes, supervised by Patrick Bernard</i>	2018
Master's Thesis "Geometric structures for representations in the Hitchin component of $\mathrm{PSL}(n, \mathbb{K})$" <i>supervised by Olivier Guichard</i>	2020
PhD Thesis "Geometric structures and representations of surface groups" <i>supervised by Beatrice Pozzetti</i>	2024

Teaching

Teaching Assistant for the course "A first course in Dynamical Systems" <i>Master's level course</i>	Winter Semester 2021-2022
Teaching Assistant for the course "Introduction to Ergodic Theory" <i>Master's level course</i>	Summer Semester 2023

Other Activities

Co-organization of the "Group Meeting", Heidelberg	Academic Year 2021-2022
Co-organization of the working group "Real Trees and Buildings", Heidelberg	Summer Semester 2022
Co-organization of the working group "Hilbert Geometries", Grenoble	Academic Year 2024-2025
Courses for the preparation of mathematical olympiads <i>Courses aimed at high school students preparing for mathematical olympiads</i>	2017-2020
Participation in the problem committee of the TFJM² <i>Team research competition for high school students</i>	2016-2021

Long Research Stays

M1 Internship at TIFR, Mumbai (4 months) Supervised by Mahan Mj.	2019
Research Visit at the Institut Fourier, Grenoble (4 months) Supervised by Andrea Seppi.	2022
Research Visit at UC Riverside and the University of Michigan (3 months) Supervised by Brian Collier and Dick Canary.	2024
Research Visit at MPI, Leipzig (3 months) Supervised by Anna Wienhard	2024

Conference Talks

Nearly Carbon Neutral Geometric Topology Conference Online talk <i>Description of domains of discontinuity for Anosov representations.</i>	2022
Meeting of the ANR project "GAPR", Nice J.A. Dieudonné Laboratory, Nice <i>Nearly geodesic immersions in higher rank.</i>	2023
International Workshop on Higher Teichmüller Theory Chern Institute, Tianjin <i>Maximal representations and fibrations by pencils of quadrics.</i>	2024
20 years of Anosov representations MPI, Leipzig <i>Dirichlet domains for Anosov subgroups.</i>	2024
Higher rank geometric structures, Higgs bundles and physics IHP, Paris <i>Anosov deformations of Barbot representations.</i>	2025
Homogeneous Dynamics and Anosov Representations SLMath, Berkeley <i>Title to be determined.</i>	2026

Seminar Talks

Seminar on Spectral Theory and Geometry Institut Fourier, Grenoble <i>Maximal representations and Anosov Borel in $\mathrm{Sp}(4, \mathbb{R})$.</i>	2022
Karlsruhe-Heidelberg-Strasbourg "Geometry Day" IRMA, Strasbourg <i>Maximal and Borel Anosov representations in $\mathrm{Sp}(4, \mathbb{R})$.</i>	2022
Seminar on Algebra, Topology and Geometry J.A. Dieudonné Laboratory, Nice <i>Maximal representations and Borel Anosov in $\mathrm{Sp}(4, \mathbb{R})$.</i>	2022
Oberseminar Differentialgeometrie Max Planck Institute, Bonn <i>Dirichlet domains for Anosov subgroups.</i>	2023
UCR Geometry Seminar UCR, Riverside <i>Finite-sided Dirichlet domains for Anosov representations.</i>	2024
RTG GeomDynTop Seminar University of Michigan, Ann Arbor <i>Fibrations by pencils of quadrics and maximal representations.</i>	2024

Geometry/Topology Seminar

2024

UIC, Chicago

*Finite-sided Dirichlet domains for Anosov representations.***Geometry Seminar**

2024

MPI, Leipzig

*Maximal representations and fibrations by pencils of quadrics.***Geometry Seminar**

2024

Universität Paderborn

*Finite-sided Dirichlet domains for Anosov representations.***Seminar on Spectral Theory and Geometry**

2024

Institut Fourier, Grenoble

*Anosov deformations of Barbot representations.***Séminaire "Géométrie et groupes discrets"**

2026

IHES, Bures sur Yvette

Slices of representations of surface groups in G'_2 and associated geometric structures.