Kostas Psaromiligkos

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Date of Birth: 23/09/1995, Athens, Greece

Research Interests

Representation Theory, Algebraic Geometry.

Professional Experience

2023-present   **Postdoctoral Researcher**, *Université Clermont Auvergne*, Clermont-Ferrand, France.
Funded under: EXCELLENT SCIENCE - European Research Council (ERC) - Modular representation theory of reductive algebraic groups and local Geometric Langlands duality

Education

2018-2023   **Ph.D in Mathematics**, *University of Chicago*, Advisor: Ngô Bao Châu.
Thesis: The Lafforgue variety and topics in Geometric Representation Theory

2017-2018   **M.S in Mathematics**, *University of Chicago*.

2014-2017   **B.A in Mathematics**, *National and Kapodistrian University of Athens*, GPA: 10.0/10.0.

Publications and Preprints

Lafforgue's variety and irreducibility of induced representations.
arXiv:2211.11834 (2022) (23 pages)

Character sheaves in characteristic p have nilpotent singular support.
arXiv:2211.11126 (2022) (10 pages)

Branchwidth is $(1, g)$-self-dual, *joint with G. Kontogeorgiou, A. Leivaditis, G. Stamoulis, D. Zoros*.
Discrete Applied Mathematics 350, (2024) p. 1-9

Directed Lovász Local Lemma and Shearer's Lemma, *joint with L. Kirousis, J. Livieratos*.
Annals of Mathematics and Artificial Intelligence 81, (2020) p. 133-155

Acyclic Edge Coloring through the Lovász Local Lemma, *joint with I. Giotis, L. Kirousis and D. M. Thilikos*.
Theoretical Computer Science 665, (2017) p. 50-60

Awards/Fellowships/Scholarships

2018   **Onassis fellowship for Doctoral studies**, $20,800.

2014-2017   **Award for excellence in Undergraduate Studies**, *National Science Foundation of Greece*.

2014-2017   **International Mathematical Competition for University Students**, *Medals: Gold, Silver, Silver*.

2014-2015   **Southern Eastern European Mathematical Olympiad for University Students**, *Medals: Gold, Gold*.

Talks

Apr 2024   **Arithmetic seminar**, *Université de Lille*, France.

Apr 2024   **Algebra seminar**, *Université de Lyon*, France.

Mar 2024   **Representations of Reductive Groups**, *Institut de Mathématiques de Marseille*, France.

Nov 2023   **Greek Algebra and Number Theory seminar**, *online*, Recording: Part 1, Part 2.

Jan 2023   **Geometry Seminar**, *University of Florence*, Italy.

Jan 2023   **Algebraic Geometry Seminar**, *University of Pisa*, Italy.

Dec 2022	**Junior Number Theory Days**, *Johns Hopkins University*, USA.
Nov 2022	**Student seminar on Character Sheaves**, *University of Chicago*, USA.
Jul 2022	**2nd Congress of Greek Mathematicians**, *National Technical University of Athens*, Greece.
Feb 2022	**Arizona Winter School: Automorphic forms beyond GL_2**, *University of Arizona*, USA.
Dec 2021	**Student seminar on Representation Theory**, *University of Chicago*, USA.
Jul 2020	**Student seminar on Algebraic Geometry**, *Online*.
Jun 2019	**1st Congress of Greek mathematicians**, *National Technical University of Athens*, Greece.
Feb 2019	**Student seminar on Representation Theory**, *University of Chicago*, USA.

Selected Workshops and Conferences

Feb 2022	**Arizona Winter School: Automorphic forms beyond GL_2**, *Tucson*, USA.
Jul 2022	**Summer school on the Langlands program**, *Online participation*, France.
Feb 2020	**Perverse Sheaves in Enumerative Geometry**, *Bonn*, Germany.
Jul 2019	**L-Functions and Geometric Representation Theory**, *Nisyros*, Greece.

Teaching Experience

2018-present	**University of Chicago, Graduate Student Lecturer**.
	○ Autumn 2022: Calculus II (Math 152)
	○ Winter 2022: Calculus III (Math 153)
	○ Autumn 2021: Calculus III (Math 153)
	○ Spring 2021: Mathematical Methods for Social Sciences (Math 195)
	○ Autumn 2020: Linear Algebra (Math 196)
	○ Winter 2020: Elementary Calculus II (Math 132)
	○ Autumn 2019: Elementary Calculus I (Math 131)
2018-present	**University of Chicago, Teaching assistant**.
	○ Autumn 2022: Graduate Algebra I (Math 351)
	○ Winter 2022: Graduate Algebra II (Math 352)
	○ Spring 2021: Honors Analysis in Rn III (Math 209)
	○ Spring 2020: Mathematical Methods for Physical Sciences I (Math 200)
	○ Winter 2020: Graduate Algebra II (Math 352)
	○ Autumn 2019: Graduate Algebra I (Math 351)
	○ Spring 2019: Honors Calculus III (Math 163) (Inquired Based Learning style)
	○ Winter 2018: Honors Calculus II (Math 162) (Inquired Based Learning style)
	○ Autumn 2018: Honors Calculus I (Math 161) (Inquired Based Learning style)

Service and Outreach

Refereeing

I have served as a referee for Discrete Applied Mathematics.

Other

2022	**Student seminar on Character Sheaves**, *University of Chicago*, Organizer.
2021-2022	**Directed Reading Program**, *University of Chicago*, Co-organizer.
	Managed a program pairing undergraduate and graduate students for quarter-long reading projects.
2018-2021	**Directed Reading Program**, *University of Chicago*, Mentor.
	Projects: Basics of Algebraic Number Theory, Arithmetic of Elliptic Curves, Spectral Graph Theory.
2020	**Student seminar on Algebraic Geometry**, *Online*, Co-organizer.
2017	**Southern Eastern European Mathematical Olympiad for University Students**, *Romania*, Team Leader.