

VASSILIS DIONYSSIS MOUSTAKAS

Curriculum Vitae

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ACADEMIC POSITIONS

Bar-Ilan University, Ramat-Gan, Israel

Postdoctoral researcher in the Combinatorics group

March 2022 - January 2023

Mentors: Ron Adin and Yuval Roichman

EDUCATION

National and Kapodistrian University of Athens, Athens, Greece

Ph.D. in Mathematics

March 2018 - December 2021

Thesis Title: Enumerative combinatorics, representations and quasisymmetric functions

Thesis Advisor: Christos A. Athanasiadis

M.S. in Mathematics

October 2015 - June 2017

Thesis Title: The Eulerian distribution on the involutions of the hyperoctahedral group

Thesis Advisor: Christos A. Athanasiadis

University of Patras, Patras, Greece

B.S. in Mathematics

September 2011 - June 2015

RESEARCH INTERESTS

My research interests include enumerative, algebraic and geometric combinatorics. In particular, I am interested in

- the interplay between the theory of symmetric and quasisymmetric functions, permutation enumeration and combinatorial representation theory
- the study of unimodal, log-concave, real-rooted and γ -positive polynomials arising in algebra, combinatorics and geometry
- the combinatorics of real and complex reflection groups

TEACHING EXPERIENCE

University of Athens, Department of Mathematics

Homework grading for the class 252: Discrete Mathematics

Spring Semester 2018

Teaching assistant for classes 421: Basic Algebra and 432: Matrix Calculus and Applications

Spring Semester 2021

PUBLICATIONS AND PREPRINTS

- 2022+ On products of Schur-positive sets of colored permutations and inverse colored descent classes
In preparation
- 2023 Descent representations and colored quasisymmetric functions
preprint, arXiv version: 2309.13615.
- 2021 Specializations of colored quasisymmetric functions
Sém. Lothar. Combin. **85B** (Proceedings of FPSAC 2021, Poster presentation), Article #49
- 2021 Specializations of colored quasisymmetric functions and Euler-Mahonian identities
Adv. Appl. Math. **127** (2021), Article 102177
arXiv version: 2003.07879.
- 2019 The Eulerian distribution on the involutions of the hyperoctahedral group is unimodal
Graphs and Combinatorics, **35** (2019), 1077–1090
arXiv version: 1801.07163.

TALKS

- KU-Jerusalem Lunch Seminar, **Einstein Institute of Mathematics, Jerusalem, Israel** 12/2022
Title: Euler–Mahonian identities and specializations of quasisymmetric functions
- Combinatorics Seminar, **KTH, Stockholm, Sweden (Online)** 09/2022
Title: Euler–Mahonian identities and specializations of quasisymmetric functions
- Second Congress of Greek Mathematicians, **NTUA, Athens, Greece** 06/2022
Title: Counting with symmetric and quasisymmetric functions
- Combinatorics Seminar, **Bar-Ilan University, Ramat-Gan, Israel** 05/2022
Title: Character formulas and descent representations of colored permutation groups
- Graduate Student Seminar, **Bar-Ilan University, Ramat-Gan, Israel (Online)** 05/2022
Title: Gamma-positivity in combinatorics, algebra and geometry

SCHOLARSHIP

- IKY (Greek State Scholarships Foundation) Scholarship *March 2018 - April 2021*

LANGUAGES

- Greek**, Mother tongue
English, Advanced, Conversationally fluent
French, Basic words and phrases

SOFTWARE SKILLS

- Python, SageMath, L^AT_EX, HTML, CSS,