

# FEDERICO CASTILLO

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## EDUCATION

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**Universidad de los Andes**

2012

B.S. in Mathematics

**University of California, Davis**

*Expected 2017*

PhD. Candidate

Pure Mathematics

## RESEARCH PAPERS

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The multidegree polytope of an irreducible subvariety of product of projective spaces, with Binglin Li and Naizhen Zhang,

<https://arxiv.org/abs/1612.00154>.

Berline-Vergne valuation and generalized permutohedra, with Fu Liu, *submitted*

<http://arxiv.org/abs/1509.07884> .

The topology of the external activity complex of a matroid, with Federico Ardila and Jose Samper. *Electronic Journal of Combinatorics, Volume 23, Issue 3 (2016)*.

The arithmetic Tutte polynomials of the classical root systems, with Federico Ardila and Michael Henley *Int Math Res Notices (2015) Vol. 2015 3830-3877*.

## EXTENDED ABSTRACTS

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The topology of the external activity complex of a matroid, with Federico Ardila and Jose Samper, *to appear in DMTCS proceedings FPSAC'16 (2016)*.

Ehrhart Positivity for Generalized Permutohedra, with Fu Liu, *DMTCS proceedings FPSAC'15 (2015), 865-876*.

The arithmetic Tutte polynomials of the classical root systems, with Federico Ardila and Michael Henley, *DMTCS proceedings FPSAC'14 (2014), 851-862*.

## TALKS/POSTERS

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UCLA Combinatorics seminar (LA, November 2016).

Introductory Workshop, Combinatorial Algebraic Geometry thematic program (Toronto, August 2016) Poster.

28th International Conference on Formal Power Series and Algebraic Combinatorics (Vancouver, July 2016) Poster.

CIMPA Research School: Algebraic, Enumerative and Geometric Combinatorics - ECCO 2016 (Medellin, June 2016).

Western Sectional Meeting, AMS Special Session: Combinatorial and Computational Commutative Algebra and Algebraic Geometry (Salt Lake City, April 2016).

Joint Mathematical Meeting, AMS Special Session: Topological Combinatorics (Seattle, January 2016).

2nd Algorithmic and Enumerative Combinatorics, Summer School 2015 (Hagenberg, July 2015)  
Poster.

27th International Conference on Formal Power Series and Algebraic Combinatorics (Daejon, June 2015) Poster

AGC seminar San Francisco State University (San Francisco, April 2015).

UC Berkeley/Davis Combinatorics Gathering (Berkeley, October 2014).

26th International Conference on Formal Power Series and Algebraic Combinatorics (Chicago, June 2014) Poster.

Cuarto Encuentro Colombiano de Combinatoria (Bogota, June 2014).

Graduate Student Combinatorics Conference (Minneapolis, April 2013).

Tercer Encuentro Colombiano de Combinatoria (Bogota, June 2012).

Congreso Colombiano de Matematicas (Bucaramanga, July 2011).

## **AWARDS**

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Alice Leung Scholarship, 2016.

Graduate Student Travel Award, UC Davis, 2016.

Miguel Velez Scholarship for Latin American students, 2015.

## **TEACHING EXPERIENCE**

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Associate Instructor, UC Davis.

MAT 12, Fall 2016.

MAT 16B, Fall 2014.

MAT 16C, Summer 2014.

Teaching Assistant, UC Davis:

Short Calculus, Calculus for BioSciences, Modern Algebra, Algebraic Combinatorics.

Instructor, Colombian Mathematical Olympiads, 2008-2012.

## **SERVICE**

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Organizer of the Student Run Discrete Math seminar, UC Davis 2013-2014.

Organizing committee of Colombian National Math Olympiad 2008-2012.