

# Michela Paganini

Department of Physics - Yale University  
266 Whitney Ave, JWG 505  
New Haven, CT 06511  
Website: [mickypaganini.github.io](http://mickypaganini.github.io)

CERN CH - Bâtiment 42-2-002  
Genève, Switzerland  
Phone: +1 (510) 230-7026  
Email: [michela.paganini@yale.edu](mailto:michela.paganini@yale.edu)

## Education

(In progress) Ph.D. Physics, Yale University, expected 2018/2019

Thesis Advisor: Tobias Golling.

M.S. Physics, Yale University, to be conferred in December 2014

B.A. Physics, University of California, Berkeley, 2013

B.A. Astrophysics, University of California, Berkeley, 2013

Pembroke-King's Programme, University of Cambridge, Summer 2012

## Research

*Member of the ATLAS Collaboration at CERN*

2013 - present

- Refined boosted top-tagging technique using Deep Learning framework for discrimination versus QCD background. Performed in-depth studies of pile-up and  $p_T$  dependence, and compared efficiency with other substructure taggers. Systematically performed input selection for elimination of mismodeled variables.
- Developed boosted boson tagger using Deep Learning for binary and multiclass classification purposes for the  $W' \rightarrow WZ$  analysis. Investigated ability to learn high order correlations between tracking and calorimeter variables, and performed variable selection studies.
- Data quality studies and corrections to dead modules of tile calorimeter for  $W'$  analysis.

Advisor: Tobias Golling.

*Supervision in Theoretical Astrophysics at the Cambridge Institute of Astronomy*

July-August 2012

- Galactic dynamics, mass-velocity profiles and anisotropy variation.

Advisor: Adriano Agnello.

*Summer Research Assistant at Università degli Studi di Milano*

June 2012

- Neutrino Physics at the Borexino experiment, Gran Sasso National Laboratory.
- Positronium formation studies for Anti-Hydrogen production at AEGIS experiment, CERN.

Advisor: Marco Giulio Giammarchi.

*Visiting Undergraduate at the Institute for Theoretical Science, University of Oregon*

May 2012

- Galactic dynamics, models to test the gravitational behavior of clusters of galaxies.

Advisor: Spencer Chang.

*Undergraduate Research in Theoretical Physics, University of California Berkeley*

Spring 2012

- Study of dark matter halos and gravity theories to understand how future observations of galaxies and clusters of galaxies will allow to test gravity on the kiloparsec length-scale.
- Discern among different theories of modified gravity, according to the agreement between our results and the value of Newton's gravitational parameter predicted by each theory.

Advisor: Tristan Smith.

*Research Intern at SETI Institute, University of California, Berkeley*

Spring 2011

- Remote observing for Optical SETI.

Advisors: Shelley Wright, Remington Stone.

*Undergraduate Research at the Space Sciences Lab, University of California, Berkeley*

2010-2011

- Data collection and analysis for MAVEN, STEREO and VEX missions.
- Catalogs of coronal mass ejections, live monitoring of solar activity.

Advisor: Janet Luhmann.

## Awards and Scholarships

Leigh Paige Prize, Yale Physics Department, 2013

UC Summer Grant, 2012

University of California Undergraduate Grant, 2011, 2012

UC Freshman Scholarship, 2010

## Teaching

Yale University

- Fall 2014: University Physics Lecture (Classical Mech.), teaching assistant for Sean Barrett.
- Spring 2014: General Physics Lab (EM), teaching assistant for Sean Barrett and Sidney Cahn.
- Fall 2013: General Physics Lab (Classical Mech.), teaching assistant for Tobias Golling and

Richard Casten.

University of California, Berkeley

- Spring 2014: Science & Sense & Sensibility, undergraduate student instructor for Saul Perlmutter, John Campbell and Robert MacCoun.

## Skills

Languages: Italian and English (Bilingual), French (Intermediate), Spanish (Elementary), Latin

Computer Skills:

Operating Systems: Mac OS X, Linux, Windows

Programming: Python, C, C++, HTML, LaTeX, MATLAB, LabVIEW, Wolfram Language, R

Software: Office, iWork, Adobe Dreamweaver

## Society Memberships

American Physical Society

American Geophysical Union

Society of Physics Students

## On Campus Involvement

Yale University

Graduate Student Assembly - Representative for Department of Physics	2013-present
Graduate School of Arts and Science Executive Committee	2014-present
Academics and Professional Development Committee Secretary	2014-present
McDougal Graduate Student Life Fellow	2014-present
Yale Minority Advisory Council - Graduate Representative	2013-present
Graduate Affiliate at Pierson Residential College	2013-2014
Board Member of Italian Society of Yale Students and Affiliates	2013-present
Co-Founder of iUSA (Italian University Societies in America)	2014

University of California, Berkeley

Society of Physics Students (SPS) Officer	2012-2013
SWPS Physics Undergraduate Coordinator	2012-2013
Member of Order of Omega Leadership Honor Society	2012-2013
Academic Tutor at Athletic Study Center	2012-2013
Founder of Italian Society at Berkeley	2010-2013
Team Manager - Div I Women's Tennis Team	2011-2013
Emerging Leaders Institute at Butler University	2012