

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n. __1_ posto/i di Ricercatore a tempo determinato in tenure track (RTT)

per il settore concorsuale ____01/A2 - Geometria e Algebra _____ ,

settore scientifico-disciplinare ____MAT/03 - Geometria _____

presso il Dipartimento di ____Matematica_____,

(avviso bando pubblicato sulla G.U. n. 6434/2023 del _15/12/2023) Codice concorso _5467

Marco Antei

MATHEMATICIAN

HSLU, Horw, Switzerland

02/03/1978 in Sanremo (Italy)

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Research Area

Algebra, Algebraic geometry, Arithmetic geometry

- Group actions,
- Fundamental groups,
- Representation theory,
- Galois theory,
- Category theory,
- Vector bundles
- Cryptography

Academic Appointments

Lecturer - University of Applied Science and Arts

HSLU - Lucerne School of Engineering and Architecture

Luzern, Switzerland

2022- present

Professor - University of Costa Rica

Ciudad universitaria Rodrigo Facio Brenes

San José, Costa Rica

2017-2022

Postdoctoral position - University of Nice

Laboratoire Dieudonné, Valrose

Grant value: 223.195€. ANR (French National Research Association), scientific coordinator of the project TOFIGROU.

Nice, France

2013-2017

Postdoctoral position - Ben Gurion University

Mathematics Department

Be'er Sheva, Israel

2011-2013

Postdoctoral position - KAIST

Mathematics Department

Daejeon, South Korea

2011

Postdoctoral position - Hausdorff Center

University of Bonn, Germany

Trimester on Algebra and Number Theory

Bonn, Germany

2010

Invited Professor - TIFR

Tata Institute of Fundamental Research, Mumbai

Research project with Prof. Vikram Mehta

Mumbai, India

2010

Invited Professor - Isaac Newton Institute

Isaac Newton Institute, Cambridge, England

Invited to participate to the program on "non-abelian fundamental Groups in arithmetic Geometry".

Cambridge, England

2009

Postdoctoral position - MPIM

Max-Planck-Institute for Mathematics, Bonn

Bonn, Germany

2008-2009

Teaching and research position - University of Lille

Department Paul Painlevé, Lille

Teaching and research position during and after the end of my PhD program.

Lille, France

2006-2008

Other Work Experience

MinervaTop-Survey and Polls

Switzerland - Italy

Role: Scientific Coordinator, co-founder.

2018-present

MinervaTop provides new and original digital services to companies. Our main goal is to provide advanced analysis to our customers applying inferential Statistics to market research, opinion and political polls using the most trustworthy software. It is a project in collaboration with Elita SRL (Udine, Italy)

Cryptographer

Milan, Italy

STMicroelectronics, Milan, Italy

2001-2002

One year collaboration with STMicroelectronics on HECC cryptosystem and TATE pairing

Education (main)

“Habilitation” - University of Nice

Nice, France

Mathematics

2015

Qualification to conduct self-contained research and to supervise research. Highest available academic title in France

PhD - Università degli studi di Milano (and University of Lille)

Milano, Italy

Philosophy Doctor in Pure Mathematics

2008

Title: Extension of torsors

Degree - University of Milan

Milan, Italy

Degree in Pure Mathematics

2001

Title: Classification of hyperelliptic curves in $GF(2^n)$

Education (summer schools)

Galatasaray University

Istanbul, Turkey

Galois Theory

2009

GTEM Summer School on Geometry and Arithmetic around Galois Theory.

Galatasaray University

Istanbul, Turkey

Geometry and Arithmetic

2008

GTEM Summer School on Geometry and Arithmetic of Moduli Spaces of Coverings.

University of Gottingen

Gottingen, Germany

Geometry on finite fields

2007

NATO Advanced Summer School on Higher-Dimensional Geometry over Finite Fields

University of Trento

Trento, Italy

Complex surfaces

2003

School on Complex Algebraic Surfaces.

University of Perugia

Perugia, Italy

Algebra and Geometry

2002

Summer School organized and funded by the “Scuola Normale Superiore of Pisa” and by INDAM (High Mathematics National Institute).

Subjects studied: Algebra and Algebraic Geometry

Advisor of PhD Thesis

Fundamental group of elliptic connected varieties

University of Nice

University of Nice, France

2016-2021

- Student: Rodrigo Codorníu
- Director: Christian Pauly, University of Nice
- Co-director: Marco Antei, University of Costa Rica
- Status: successfully defended

Advisor of Master Thesis

Extension of torsors and prime to p fundamental group scheme

Universidad de Costa Rica

Student: Jimmy Monge

Universidad de Costa Rica

2019-2020

Group schemes

Universidad de Costa Rica

Student: Bryan Rivas

Universidad de Costa Rica

2018-2019

Extension of torsors over affine schemes

Universidad de Costa Rica

Student: Jorge Esquivel

Universidad de Costa Rica

2018-2019

Membership, Honors

Membership

•2003-2008 MEMBER OF THE GTEM EUROPEAN GROUP (GALOIS THEORY AND EXPLICIT METHODS)

Assignments as referee

•JOURNAL OF ALGEBRA

•COMMUNICATIONS IN ALGEBRA

•BULLETIN DES SCIENCES MATHÉMATIQUES

•DOCUMENTA MATHEMATICA

•ROCKY MOUNTAIN JOURNAL OF MATHEMATICS

•PUBLICATIONS MATHÉMATIQUES DE BESANÇON

•PROCEEDINGS OF A CONFERENCE AT T.I.F.R. (SPRINGER)

•2009-2013 REVIEWER FOR ZENTRALBLATT MATH

Scholarships

•2002-2006 PHD SCHOLARSHIP GRANTED BY UNIVERSITY OF MILAN.

•2001-2002 "YOUNG BRIGHT MATHEMATICIANS SCHOLARSHIP" HOLDER.

Awards

Best innovating professor Award

•2020. AWARD OBTAINED FOR THE BEST VIRTUAL CLASSES OF 2020 DURING THE PANDEMIC. PRIZE AWARDED BY THE STUDENTS.

Only three teachers in all the Department of Mathematics obtained this award.



Teaching experience

Mathematics-Physics 1

ROLE: MAIN TEACHER

- Subject: Complex numbers, Fourier, Differential Equations
- Level of students: Applied Science
- Class size: 30

HSLU, Switzerland

2023-present

Linear Algebra

ROLE: MAIN TEACHER

- Subject: Linear Algebra
- Level of students: Applied Science
- Class size: 30

HSLU, Switzerland

2023-present

Mathematics-Physics 2

ROLE: MAIN TEACHER

- Subject: Probability, Statistics and Calculus II
- Level of students: Applied Science
- Class size: 15

HSLU, Switzerland

2022-present

Mathematics Fundamentals

ROLE: MAIN TEACHER

- Subject: Calculus I
- Level of students: Applied Science
- Class size: 40

HSLU, Switzerland

2022-present

Analytic Geometry

ROLE: MAIN TEACHER

- Subject: plane curves and surfaces
- Level of students: 3rd year of Mathematics for Education
- Class size: 30

University of Costa Rica

2022

Analytic Geometry

ROLE: MAIN TEACHER

- Subject: plane curves and surfaces
- Level of students: 3rd year of Mathematics for Teaching
- Class size: 30

University of Costa Rica

2022

Algebraic Geometry

ROLE: MAIN TEACHER

- Subject: algebraic projective plane curves
- Level of students: 4th/5th year of Pure Mathematics
- Class size: 10

University of Costa Rica

2021

Analytic Geometry

ROLE: MAIN TEACHER

- Subject: plane curves and surfaces
- Level of students: 3rd year of Mathematics for Teaching
- Class size: 30

University of Costa Rica

2021

Linear Algebra

ROLE: MAIN TEACHER

- Subject: matrices, linear systems, plane curves
- Level of students: 1st year of Pure Mathematics
- Class size: 30

University of Costa Rica

2020

Galois Theory

ROLE: MAIN TEACHER

- Subject: Fields extensions and Galois theory
- Level of students: 4th year
- Class size: 15

University of Costa Rica

2020

Linear Algebra

ROLE: MAIN TEACHER

- Subject: matrices, linear systems, plane curves
- Level of students: 1st year, non Mathematicians
- Class size: 30

University of Costa Rica

2020

Analytic Geometry

ROLE: MAIN TEACHER

- Subject: plane curves and surfaces
- Level of students: 3rd year of Mathematics for Teaching
- Class size: 30

University of Costa Rica

2020

Linear Algebra

ROLE: MAIN TEACHER

- Subject: matrices, linear systems, plane curves
- Level of students: 1st year, non Mathematicians
- Class size: 30

University of Costa Rica

2019

Arithmetic Geometry

ROLE: MAIN TEACHER

- Subject: Elliptic and hyperelliptic curves and cryptography
- Level of students: 4th-5th year of Pure Mathematics
- Class size: 15

University of Costa Rica

2019

Abstract Algebra

ROLE: MAIN TEACHER

- Subject: groups, rings, polynomials
- Level of students: 2nd year of Pure Mathematics
- Class size: 15

University of Costa Rica

2019

Linear Algebra

ROLE: MAIN TEACHER

- Subject: matrices, linear systems, plane curves
- Level of students: 1st year, non Mathematicians
- Class size: 30

University of Costa Rica

2018

Galois Theory

ROLE: MAIN TEACHER

- Subject: Fields extensions and Galois theory
- Level of students: 4th year of Pure Mathematics
- Class size: 15

University of Costa Rica

2018

Commutative Algebra

ROLE: MAIN TEACHER

- Subject: Modules, flatness, Dedekind domains, factorization
- Level of students: 4th year of Pure Mathematics
- Class size: 15

University of Costa Rica

2018

Linear Algebra

ROLE: MAIN TEACHER

- Subject: matrices, linear systems, plane curves
- Level of students: 1st year, non Mathematicians
- Class size: 30

University of Costa Rica

2017

Arithmetic Geometry

ROLE: MAIN TEACHER

- Subject: Elliptic and hyperelliptic curves and cryptography
- Level of students: 4th-5th year of Pure Mathematics
- Class size: 15

University of Costa Rica

2017

Algebraic Geometry

ROLE: MAIN TEACHER

- Subject: Varieties, Schemes, Sheaves, Vector bundles, Sheaf cohomology
- Level of students: 4th-5th year of Pure Mathematics
- Class size: 15

University of Costa Rica

2019

A friendly introduction to the fundamental group scheme

ROLE: INVITED PROFESSOR

- Subject: group schemes, torsors and fundamental groups
- Level of students: PhD
- Class size: 15

IIT Madras, Chennai, India

2013

The Picard Scheme

ROLE: INVITED PROFESSOR

- Subject: Picard functors and the Picard Scheme
- Level of students: PhD
- Class size: 15

TIFR, Mumbai, India

2010

Linear Algebra

ROLE: ASSISTANT TEACHER

- Subject: matrices, linear systems, logic, arithmetic
- Level of students: 1st year, Engineers
- Class size: 20

University of Lille

2007-2008

Calculus

ROLE: ASSISTANT TEACHER

- Subject: real functions in one variable, derivatives, integrals
- Level of students: 1st year, Engineers
- Class size: 20

University of Lille

2007-2008

Linear Algebra

ROLE: ASSISTANT TEACHER

- Subject: matrices, linear systems, logic, arithmetic
- Level of students: 1st year, Engineers
- Class size: 20

University of Lille

2006-2007

Calculus

ROLE: ASSISTANT TEACHER

- Subject: real functions in one variable, derivatives, integrals
- Level of students: 1st year, Engineers
- Class size: 20

University of Lille

2006-2007

Calculus and Linear Algebra

ROLE: ASSISTANT TEACHER

Polytechnic of Milano

2002-2003

- Subject: real functions in one variable, derivatives, integrals, plane curves and surfaces
- Level of students: 1st year, Engineers
- Class size: 100

Grants

Economical support: 223.195 €

University of Nice, France

ANTEI M. & SIMPSON C. & MESTRANO N. & TOSSICI D.

2013-2016

- Funded by ANR (French National Research Association)
- Scientific Coordinator: Antei M.

Co-ordinator of meetings and events

Conference “Torsors in Aritmetic and Algebraic Geometry”

University of Nice, France

ANTEI M. & PAULY C.

2016

Spring school on the fundamental group scheme and related topics

University of Nice, France

ANTEI M. & PAULY C.

2014

Invited Speaker to a Conference (selection)

Conference “Higgs Bundles”

University of Bangalore, India

TITLE OF THE TALK: “ON THE EXISTENCE OF THE FUNDAMENTAL GROUP SCHEME”

2016

Conference “Rational Varieties”

Poincaré Institute, Paris, France

TITLE OF THE TALK: “ON THE EXISTENCE OF THE FUNDAMENTAL GROUP SCHEME”

2015

Conference “Discussion Meeting on Algebraic and Analytic Geometry Related to Bundles”

Tata Institute of Fundamental Research, India

TITLE OF THE TALK: “ON THE FUNDAMENTAL GROUP SCHEME OF RATIONALLY CHAIN CONNECTED VARIETIES”

2015

Conference “Meeting of the Korean Mathematical Society”

University of Daegu, South Korea

TITLE OF THE TALK: “ON THE EXTENSION OF TORSORS”

2011

Colloquium

Tata Institute of Fundamental Research, India

TITLE OF THE TALK: “GALOIS CLOSURE OF ESSENTIALLY FINITE MORPHISMS”

2010

Summary of Scientific Achievements

1. Extension of torsors and the prime to p fundamental group scheme

Annales de Fourier

ANTEI M. & CALVO J.

2021

DOI: 10.5802/aif.3475

2. Erratum for “Heights of vector bundles and the fundamental group scheme of a curve”

Duke Math. J. 169 (16):
3221-3222

ANTEI M. & EMSALEM M. & GASBARRI C.

2020

DOI: 10.1215/00127094-2020-0065

3. Sur l'existence du schéma en groupes fondamental

*Épjournal de Géométrie
Algébrique*, 8 juin 2020, Volume 4

ANTEI M. & EMSALEM M. & GASBARRI C.

2019

DOI: 10.46298/epiga.2020.volume4.5436

4. Nori fundamental gerbe of essentially finite covers and Galois closure of towers of torsors

Sel. Math., New Ser. 25, No. 2,
Paper No. 18, 37 p.

ANTEI M. & BISWAS I. & EMSALEM M. & TONINI F. & ZHANG L.

2019

DOI: 10.1007/s00029-019-0449-z

5. Models of torsors over affine spaces

Mathematika 65, No. 3, 530-541

ANTEI M. & ESQUIVEL J.

2019

DOI: 10.1112/S0025579319000068

6. The pseudo-fundamental group scheme

J. Algebra 523, 274-284

ANTEI M. & DEY A.

2019

DOI: 10.1016/j.jalgebra.2018.12.015

7. Models of torsors and the fundamental group scheme

Nagoya Math. J. Journal Profile
230, 18-34

ANTEI M. & EMSALEM, M.

2018

DOI: 10.1017/nmj.2016.67

8. On the bumpy fundamental group scheme

*Analytic and Algebraic
Geometry*. Springer, Singapore

ANTEI M.

2015

DOI: 10.1007/978-981-10-5648-2_1

9. On the fundamental group of rational chain connected varieties

Int Math Res Notices

ANTEI M. & BISWAS, I.

2015

DOI: 10.1093/imrn/rnv132

10. Extension of finite solvable torsors over a curve

Manuscripta Mathematica,
Volume 140, Issue 1

ANTEI M.

2013

DOI: 10.1007/s00229-012-0535-4

Works in Progress

1. On a conjecture for the fundamental group scheme

ANTEI M.

2. Branch locus for normal schemes

ANTEI M.

3. Quotients of the pseudo fundamental group scheme for small schemes

ANTEI M.

Languages

Italian

NATIVE

French

NATIVE-LIKE

English

FLUENT

Spanish

FLUENT

Hebrew

BEGINNER

German

BEGINNER

Skills

Computer Science

•**OPERATING SYSTEM** : WINDOWS, LINUX

•**PROGRAMMING** : PARI, C++ (BASIC), MAPLE (BASIC), PYTHON (BASIC), MATLAB (BASIC)

•**OTHERS** : \LaTeX , OFFICE, BEAMER

Data 22.01.2024

Luogo Kriens, Svizzera