Vincenzo Galgano

Contact Information

Graduate student in Mathematics
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Personal Information

Nationality: Italian
Birth: August 16, 1993, in Taranto
Address: Via P. Landi 6, Pisa

Education

2016/2017 - today
Graduate student in Applied Mathematics - University of Pisa.

2012/2013 - 2015/2016
Bachelor student in Pure Mathematics - University of Pisa.

Bachelor degree in Mathematics, 98/110; December 16, 2016.

Bachelor dissertation: Teoria di Galois su superfici di Riemann: rivestimenti ramificati e algebre étale.
Dissertation topic: Following Adrien Douady's approach, we introduce a generalization of the classical Galois Theory, due to Grothendieck, through étale algebra and we show a categorical antiequivalence between the category of finite analytical ramified coverings of a compact connected Rimeann surface and the category of étale algebra over its meromorphic functions field. This antiequivalence allows us to link the Grothendieck Galois Theory to the Covering Theory. In particular we analyze the case of compact connected Riemann surfaces: looking at them as finite analytical ramified coverings of the Riemann sphere, they are (anti)equivalent to the field extensions with trascendence degree 1 over $\mathbb{C}$. Thanks to this classication, we are able to calculate the absolute Galois group of the field $\mathbb{C}(Z)$.
Advisor: Professor Marco Franciosi.

2007/2008 - 2011/2012
High school student - Liceo Classico "G. Moscati", Grottaglie (TA).

High school diploma, 100/100 *cum laude*; July, 2012.

Language Skills

Italian: Mother Tongue.
English: Fluent - First Certificate in English (FCE), 2009.
French: Basic - Delf A1, 2006.

Computer Skills

LaTeX: Intermediate.
Matlab: Basic.
C Language: Basic.

Main Undergraduate Contents

- **Algebra**
  Contents: Group Theory (structure theorem, group actions, Sylow theorems), Ring Theory, Module Theory, monomial ideals, Groebner basis, Galois Theory (basic Kummer Theory), basic Category Theory.
- **Geometry**
  Contents: Linear Algebra, Topology, Complex Analysis in one variable, Omotopy Theory, Covering Theory, Projective Geometry, basic Algebraic Geometry.
- **Analysis**
  Contents: basic Lebesgue Theory, basic concepts about Fourier series and Fourier transform.
- **Probability**
  Contents: convergence of random variables (in law, in probability, almost sure), limit theorems (Law of Large Numbers, Central Limit Theorem), conditional expectation, basic Stochastic Process Theory (Wiener, Poisson).
- **Numerical Analysis**
  Contents: Gershgorin theorems, LU and QR factorizations, iterative methods in linear systems, Newton methods for zeros of continous functions, Lagrange polynomial interpolation.
- **Statistics**
  Contents: statistical inference, basic Gaussian models, statistical tests.

Personal Statement

Commutative Algebra is my main topic of interest; more broadly, now I am interested in its links to Algebraic Geometry and Computer Algebra.