Felipe Espreafico Guelerman Ramos

| Curriculum Vitae |

Estrada Dona Castorina, 110 – Rio de Janero – Brazil
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Research Interests

My current research interests center around Algebraic Geometry, Complex Geometry and Symplectic Geometry. Lately, I've been working in Mirror Symmetry, speacially on the problem of computing Gromov Witten invariants for Calabi-Yau manifolds. I also have insterest in Singularity theory and Hodge theory.

Education

PhD in Mathematics — **Rio de Janeiro**
Institute of Pure and Applied Mathematics — *2020–*

BSc in Mathematics — **São Carlos**
University of São Paulo, 9.6/10 — *2016–2019*
with a semester (2018-2019) spent at Leibniz University Hannover

High School Degree — **Ribeirão Preto**
Foundation Armando Álvares Penteado — *2013–2015*

Non-Scientific Experience

University of São Paulo — **São Carlos**
High School teaching — *2017–2019*
Voluntary teacher at a preparatory course for High School Students

Languages

Portuguese: Native

English: Fluent

German: Basic

Research Experience and Grants awarded

Transcendental Methods of algebraic/complex geometry in hyperbolic geometry — **University of São Paulo**
FAPESP Undergraduate Research Grant, São Carlos — *2016–2017*
In this research project I studied selected topics in measure theory, complex analysis, Riemann surfaces and algebraic geometry in order to apply it in hyperbolic geometry. I even had some contact with Gromov-Lawson-Thurston conjecture. I was advised by Prof Dr Alexandre Ananin.

Introduction to Analytic Geometry — **University of São Paulo**
FAPESP Undergraduate Research Grant, São Carlos — *2017–2018*
In this research project I studied some basics of complex analytic geometry and started applying it on Singularity Theory, specially on determinantal singularities, having contact with some research papers in the area. I was advised by Prof Dr Nivaldo Grulha and Prof Dr Maria Aparecida Soares Ruas.

Tjurina Transform and Determinantal Singularities. — **Leibniz Universität Hannover**
FAPESP Research Internship Abroad Grant, Hannover — *2018–2019*
This grant allowed me to spent a semester in Hannover to develop a research project. This project consisted in studying two research papers on determinantal singularities. One about the homotopy-type of the Milnor fiber of essentially isolated determinantal singularities and the other one about computing discriminants of determinantal singularities using the Tjurina Transform. As prerequisites, I studied some Computational Algebra and Milnor Fibration Theorem (and the tools related to it). I was advised by apl Prof Dr Anne Frühbis-Krüger and had contact with Dr Matthias Zach.

Intersection Homology and Applications to Singularity Theory — **University of São Paulo**
FAPESP Undergraduate Research Grant, São Carlos — *2019–2019*
In this project I studied Intersection (co)homology Theory: an important set of invariants which substitute the usual homology in the study of singular varieties. I followed Banagl's book and Friedman's notes on this topic. I was advised by Prof Dr Nivaldo Grulha.

Open Gromov-Witten invariants and moduli of enhanced Clalabi-Yau threefolds — **Inst. Pure and Appl. Mathematics**
CNPq PhD Fellowship, Rio de Janeiro — *2020–2024*
This grant is a 4-year PhD fellowship. My project is centered on computing Open Gromov Witten invariants and on defining a moduli space of enhanced Calabi Yau threefolds in this open case. I am currently under supervision of Prof Dr Hossein Movasati.

Prizes and Awards

Bronze Medal
Brazilian Physics Olympiad (high school level) *2015*

Silver Medal
São Paulo's Chemistry Olympiad (high school level) *2015*

Bronze Medal
Brazilian Chemistry Olympiad (high school level) *2015*

Honorable mention
Brazilian Mathematics Olympiad (undergraduate level) *2017*

Outstanding Academic Performance as Undergraduate student
University of São Paulo *2019*

Participation in Scientific Events

Brazilian Mathematics Coloquium **Rio de Janeiro**
Institute of Pure and Applied Mathematics *2017*

International School on Singularities and Lipschitz Geometry **Cuernavaca**
Autonomous National University of Mexico *2018*

15th International Workshop on Real and Complex Singularities **São Carlos**
University of São Paulo *2018*

21st Undergraduate Symposium of Mathematics **São Carlos**
University of São Paulo *2018*

6th Heildelberg Laureate Forum **Heildelberg**
Heidelberg University *2018*

University of São Paulo's International Scientific Initiation Symposium **São Carlos**
University of São Paulo *2019*

Brazilian Mathematics Colloquium (Online) **Rio de Janeiro**
Institute of Pure and Applied Mathematics *2021*

Participation in seminars

Kindergarten undergraduate seminar
University of São Paulo *2016–2017*
Seminar about advanced themes organized by professors Alexandre Ananin and Carlos Grossi for their students.

Introduction to Algebraic Topology.
University of São Paulo *2018–2018*
Seminar organized by students and Prof Dr Leandro Aurichi. We followed Massey's *A Basic Course in Algebraic Topology*.

Oberseminar Algebraic Geometry
Leibniz Universität Hannover *2018–2019*
Research seminar organized by the Algebraic Geometry group at Leibniz University.

Characteristic Classes and Intersection Homology
University of São Paulo *2019*
Seminar organized by Prof Dr Nivaldo Grulha and his students.

Geometry, Arithmetic and Differential Equations of Periods
Institute of Pure and Applied Mathematics *2020–2021*
Virtual research seminar organized by Hossein Movasati, Younes Nikeledan and Thiago Fonseca

Talk, Lectures and Posters

The Banach-Tarski Paradox **University of Sao Paulo**
Lecture at Kindergarten seminar, São Carlos *2016*

A simple proof for the Banach-Tarski Paradox in $\mathbb{R}^3$ **Institute of Pure and Applied Mathematics**
Poster at Brazilian Mathematics Coloquium, Rio de Janeiro *2017*

Ultrametric Spaces and the Płoski Theorem for plane curves **University of São Paulo**
Talk at 21st Undergraduate Symposium of Mathematics, São Carlos *2018*

The Van-Kampen Theorem **University of São Paulo**
Lecture at Introduction to Algebraic Topology Seminar, São Carlos *2018*

Bouquet Decomposition for determinantal milnor fibers **University of São Paulo**
Poster at University of São Paulo's International Scientific Initiation Symposium, São Carlos *2019*

The Fukaya Category and Kontsevich's HMS conjecture **University of Campinas**
Online lecture given at the Masters Level Geometry Seminar by invitation, Campinas *2021*

Reference People

Hossein Movasati
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