MARCO RAMPAZZO

PERSONAL INFORMATION

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ACADEMIC ACTIVITY

Current position

Postdoc, University of Bologna — February 2021 – now

Previous positions

Teaching assistant, University of Bologna — October 2021 – January 2022

Teaching assistant, University of Stavanger — October 2020 – December 2020

PhD student in mathematics, University of Stavanger — September 2016 – September 2020
Supervisor: Michał Kapustka
Thesis: "Equivalences of Calabi–Yau mainfolds and roofs of projective bundles"

Guest positions / Thematic programs

Guest of the Paul Sabatier University, Toulouse — February 2019 – May 2019
Funding: Norwegian Research Council mobility grant
Host: Laurent Manivel

OTHER COLLABORATIONS

Algoretico s.r.l.s.

https://www.algoretico.it — January 2022 – now
Subject: epipolar geometry in computer vision

EDUCATION

Master's degree in Physics — July 2016
University of Milan

Bachelor's degree in Physics — December 2013
University of Milan

RESEARCH INTERESTS AND WORK IN PROGRESS

Algebraic varieties: Calabi–Yau varieties, homogeneous varieties and homogeneous vector bundles, Fano varieties with multiple projective bundle structures (with Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi)

Derived categories of coherent sheaves: semiorthogonal decompositions, mutations of exceptional collections, derived equivalences, Fourier–Mukai transform, homological projective duality (with Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi, Riccardo Moschetti, Jacopo Gandini)

Birational geometry: roofs of projective bundles, K-equivalence, DK-conjecture (with Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi)

Gauged linear sigma models: multiple geometric phases, phase transitions, variation of GIT (with Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi)

Mathematical physics: geometric interpretation of Feynman integrals, physical mirror symmetry for local Calabi–Yau varieties (with Sergio Cacciatori)

TEACHING

Linear Algebra, exercise classes	fall 2021
Discrete Mathematics, exercise classes	fall 2020
Linear Algebra, exercise classes	fall 2020
Probability and Statistics, exercise classes	spring 2020
Linear algebra, teaching and exercise classes	fall 2019
Linear algebra, exercise classes	fall 2018
Linear algebra, exercise classes	fall 2017

CONFERENCE TALKS

SAXAG seminar. *Derived categories and GLSM phase transitions*	Leipzig, 23 June 2022
Workshop "Grothendieck ring and derived category: a gathering". $\mathbb{L}$*-equivalence for Calabi-Yau pairs in generalized Grassmannians*	Turin, 27–28 April 2022
Seminar of Algebra and Geometry of the University of Bologna. *Semiorthogonal decompositons and homogeneous varieties*	Bologna, 15 June 2021
Workshop "Algebraic Geometry days". *Mukai roofs and K3 surfaces*	Stavanger, 25–26 November 2019
Conference "Nasjonalt Algebramøte 2019". *Derived equivalence of Mukai roofs: the case of K3 surfaces of degree 12*	Oslo, 7–8 November 2019
Seminar of Algebra of the Jagellonian University. *Computing Hodge numbers of Calabi–Yau varieties in Grassmannians*	Kraków, 11 April 2019
Conference "Nasjonalt Matematikermøte 2018, PhD day". *A GLSM description for a pair of non birational Calabi–Yau threefolds* (contributed talk)	Bergen, 12 September 2018
Workshop "Motives of Calabi–Yau manifolds". *A gauged linear sigma model description for a pair of non birational Calabi–Yau threefolds*	Kraków, 19–21 May 2018

SEMINARS ORGANIZED

Seminar: *Bridgeland stability conditions* — Bologna – Chemnitz – Nancy, fall 2021
Organizer together with Simone Billi, Francesco Denisi, Franco Giovenzana, Annalisa Grossi and Mihai–Cosmin Pavel.
Homepage: https://marcorampazzo.github.io/bridgeland

Seminar: *The mathematics of gauged linear sigma models* — Toulouse, spring 2019
Organizer and speaker

PUBLICATIONS AND PREPRINTS

1. *PhD Thesis:* Marco Rampazzo. *Equivalences between Calabi–Yau manifolds and roofs of projective bundles*. (2021). https://doi.org/10.31265/usps.78
   Available online at https://ebooks.uis.no/index.php/USPS/catalog/book/78
2. *Publication:* Michał Kapustka, Marco Rampazzo. *Mukai duality via roofs of projective bundles*. Bull. Lond. Math. Soc. (2022). https://doi.org/10.1112/blms.12597
3. *Publication:* Michał Kapustka, Marco Rampazzo. *Torelli problem for Calabi-Yau threefolds with GLSM description*. Communications in Number Theory and Physics, Volume 13, No. 4 (2019). https://dx.doi.org/10.4310/CNTP.2019.v13.n4.a2
4. *Preprint:* Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi, Marco Rampazzo. *The generalized roof $F(1,2,n)$: Hodge structures and derived categories*. (2021). Available at https://arxiv.org/abs/2110.10475
5. *Preprint:* Marco Rampazzo. *Calabi–Yau fibrations, simple K-equivalence and mutations*. (2020). Available at https://arxiv.org/abs/2006.06330
6. *In preparation:* Enrico Fatighenti, Michał Kapustka, Giovanni Mongardi, Marco Rampazzo. *Homological projective duality for some Fano varieties in Grassmannians*. (2022).