

Amaury Micheli

POSTDOCTORAL RESEARCHER / FRENCH CITIZEN

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Keywords: Cosmology - Quantum Correlations - Gravity - Numerical Analysis - Quantum Gases

Research and Teaching

Postdoctoral Researcher

iTHEMS RIKEN

Independent researcher

Wako, Saitama, Japan

from December 2023

Postdoctoral Researcher

Laboratoire Charles Fabry, Institut d'Optique Graduate School

Part of the theory group of the experimental collaboration COSQUA

Palaiseau, France

September 2023 - December 2023

"Entanglement and Decoherence in Analogue Gravity experiments and Cosmology", PhD under the supervision of Jérôme Martin & Scott Robertson.

Irène Joliot-Curie Laboratory

Part of the "Cosmology and Quantum Simulation" (COSQUA) project with Chris Westbrook's team at Laboratoire Charles Fabry of the Institut d'Optique Graduate School.

Orsay, France

Sept. 2019 - Sept. 2023

Teaching at University

Université Paris-Saclay

Tutorials of General Relativity & Cosmology (English), Analytical Mechanics (English/French) to 3rd year Bachelors and Geometrical Optics (French) to 1st year Bachelors.

Practicals and lessons of Geometrical Optics to 1st year Bachelors.

Exercise conception for Analytical Mechanics.

Orsay, France

September 2019 - September 2023

R&D - Internship

HORIBA

Development of a correction algorithm for an FTIR spectrophotometer.

Kyoto, Japan

July 2017 - Aug. 2017

Assistant Teacher in preparatory class to French engineering schools competitive exam (Bachelor level) - Internship

Henri Parriat High School

Tutorials for undergraduate and high school students.

Daily personalized training for students preparing competitive exams.

Montceau-Les-Mines, France

Sept. 2015 - April 2016

Education

Master 2 ICFP (International Centre for Fundamental Physics), Theoretical Physics Major

École Normale Supérieure

Distinction : High Honours

Paris, France

2018 - 2019

Engineer diploma of École Polytechnique

École Polytechnique

Majors : Theoretical Physics and Mathematics

GPA : 3.94/4

Palaiseau, France

2015 - 2018

Conference Organisation

Series of workshops iTHEMS Cosmology Forum

iTHEMS RIKEN

Series of trimestrial one-day focused workshops

Founding member, current member of SOC and LOC

Wako, Saitama, Japan

from April 2024

International conference "When \hbar meets G ."

Institut d'Astrophysique de Paris

Member of SOC and LOC

Search of sponsors and practical budgeting.

Paris, France

August 2021 - July 2022

Skills

Programming Python, Mathematica, Jupyter, LaTeX
Languages French, English, Mandarin (Intermediate), Japanese (Beginner)

Honors & Awards

2018 **Medal L.E. Rivot (Quantumness of the cosmological perturbations)** , Internship Prizes, Sciences
Physiques et de l'Univers de l'Académie des sciences *Paris, France*

2013 **1st Prize (Group "Optical Music")**, Experimental Physics Olympiads *Paris, France*

Talks

JGRG33 - Kindai University *Osaka, Japan*
Analogue Gravity: Case of a (p)reheating experiment *5th Dec. 2024*

iTHEMS Coffee Meeting *Wako, Japan*
A subjective view on what a quantum effect is *8th Nov. 2024*

4th Early Universe Mini-workshop - Yastugake Commons *Kyosato, Japan*
Quantum features in cosmological perturbations? *6th Sep. 2024*

1st NCTS-iTHEMS Joint Workshop - NCTS *Taipei, Taiwan*
Simulating a preheating scenario in the lab? *26th Aug. 2024*

GRACES Seminar- LPENS *Paris, France*
Simulating a preheating scenario in the lab? *1st July 2024*

QFTCS 2024 - Instituto Superior Técnico *Lisbon, Portugal*
Evolution of entanglement in an analogue preheating experiment *23rd June 2024*

Gravity and Cosmology 2024 - YITP *Kyoto, Japan*
Quantum features in cosmological perturbations? *29th Jan. 2024*

iTHEMS Physics Seminar *Wako, Japan*
Quantum features in cosmological perturbations? *18th Jan. 2024*

Quantum simulation of gravitational problems on condensed matter analog models - ECT* *Trento, Italy*
Evolution of entanglement in an analogue preheating experiment *23rd June 2023*

Cosmology and Quantum Physics at LPENS *Paris, France*
Quantumness of cosmological perturbations *6th June 2023*

Analogue Gravity in Benasque 2023 *Benasque, Spain*
Evolution of entanglement in an analogue preheating experiment *31st May 2023*

Cosmology Journal Club - Padova University *Padova, Italy*
Quantumness of cosmological perturbations *12th Mar. 2023*

Hubisz's group seminar - Syracuse University *New-York, USA*
Quantumness of cosmological perturbations *10th Feb. 2023*

3PAC Seminar - Imperial College *London, England*
Quantumness of cosmological perturbations *3th Feb. 2023*

Kick-off Meeting GDR CoPhy - LPTHE

Quantum signatures in cosmological perturbations?

Paris, France

19th Jan. 2023

 $\mathcal{G}\mathcal{R}\mathcal{E}\mathcal{C}\mathcal{O}$ group's Seminar - IAP

Quantumness of cosmological perturbations

Paris, France

16th Jan. 2023

Theoretical Cosmology Seminar - ICG

Quantumness of cosmological perturbations

Portsmouth, England

16th Jan. 2023

"Rethinking beyond the standard model", Cargèse Summer School

Quantum Discord and decoherence of inflationary perturbations

Cargèse, Corsica

4th Jun. 2022

"When \hbar meet G .", IAP Colloquium, Paris

Quantum Discord and decoherence of inflationary perturbations

Paris, France

30th Jun. 2022

IAP's Astronomy Night 2022

Outreach : Quantum Inflation and Daily life of a PhD student (French)

Paris, France

4th Jun. 2022

Asia-Pacific School and Workshop on Gravitation and Cosmology 2022 - Soochow University

Quantum Discord and decoherence of inflationary perturbations

Taipei, Taiwan

20th Mar. 2022

2nd Symposium on Gravitation and Cosmology - IIT Madras

Quantum Discord and decoherence of inflationary perturbations

Chennai, India

3rd Feb. 2022

1st TUG (Theory Universe Gravity) Workshop - Institut Henri Poincaré

Quantum Discord and decoherence of inflationary perturbations

Paris, France

13th Dec. 2021

17th Journées de la Matière Condensée

Decoherence in analogue preheating experiment

Rennes, France

9th Aug. 2021

PPCM Meeting 2019

Quantumness of inflationary cosmological perturbations - ENS

Paris, France

Jul. 2018