

Curriculum Vitae

Surname: Musco

First Name: Ilia

EDUCATION

11/2001 – 4/2006

Ph.D. in Astrophysics at the “International School for Advanced Studies” (S.I.S.S.A.), Trieste, Italy.

Supervisor: *Prof J.C. Miller*

Thesis Title: “Primordial Black Hole Formation”

Date of achievement: 6 April 2006

10/1994 – 11/2000

Bachelor/Master Degree in Physics, University of Trieste (Italy).

CURRENT POSITION

9/2019 – 3/2020

Researcher at the Department of Theoretical Physics of the University of Geneva.

PREVIOUS POSITIONS

4/2018 – 8/2019

Postdoc at Institut de Ciències del Cosmos (ICC), University of Barcelona (<http://icc.ub.edu>).

10/2014 – 9/2017 **CNRS Postdoc** at Laboratoire Univers et Théorie (LUTH) Observatoire de Paris/Meudon (www.luth.obspm.fr).

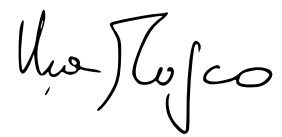
1/2009 – 12/2011

Postdoc at the Centre of Mathematics for Applications (CMA), University of Oslo (UIO), Norway. (www.cma.uio.no).

3/2006 – 12/2007 **Postdoc** at the School of Mathematical Sciences (Astronomy Unit) of the Queen Mary University of London (QMUL) (www.maths.qmul.ac.uk). **Note:** This position was funded by “Fondazione Italiana della Riccia”.

AWARDS:

Hartle prize from the **International Society on General Relativity and Gravitation** for one of the best talks given by PhD students during the International Conference GR17 (Dublin 2004)



2016 - 2017	Davide Crema , co-supervision of master student at the University of Milano Bicocca.
2018 - 2019	Alba Kalaja , co-supervision of master student at the University of Barcelona (visiting student from the University of Padova), now PhD student in Groningen.
2019 - 2020	Theodoros Papanikolaou , co-supervision of a PhD student of APC (University of Paris), visiting Geneva for a collaboration.

TEACHING

May 2015	Course on Relativistic Hydrodynamics, Gravitational Collapse and Black Hole formation for Master and PhD students at the University Federico II of Napoli.
2010 – 2011	Course on Partial Differential Equations (INF-MAT 3360) at the Informatics Department of the University of Oslo (UIO).
9/2004 – 2/2005	University Tutor of Physics for the first year physics students at the University of Trieste (Italy).
10/2006 – 12/2007	Teaching Assistant for student course work at the “School of Mathematical Sciences (Astronomy Unit), Queen Mary University of London.” ^{[P] [SEP]}

MAJOR

COLLABORATIONS^{[P] [SEP]}

2019 - Now	Member of the LISA consortium, involved within the project on Primordial Black Holes.
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CAREER BREAKS

2008 (12 months)	Temporary teacher at secondary school during this period
1/2012 - 9/2014	Because of family problems I left Academia for almost 3 years.

SUPERVISION

TRACK RECORD

- I am recognized as a **leading expert** in the research topic of **Primordial Black Hole (PBH) formation**, using numerical simulations performed with a personal AMR (adaptive mesh refinement) numerical code developed during my PhD.
- **The paper “Threshold for primordial black holes: Dependence on the shape of the cosmological perturbations” - *Phys.Rev. D* 100 (2019) no.12, 123524 - has been selected as an Editors’ suggestion.**
- Since 2004 I gave several public talks during international meetings, and I have been invited to give seminars in various University around the world. In particular :
 - November 2013: **invited speaker** for the international workshop on *Wormholes and Primordial Black Holes* in Nagoya (Japan).
 - May 2018: **invited speaker** for the workshop on *Primordial Black Holes* at CERN (Geneva).
 - March 2020: **invited speaker** for the International Conference *Friends of Friends 2020* to be held in Cordoba (Argentina)

- During my research career **I have lived in different European countries**, establishing a wide networks of contacts and collaborations with several collaborators in different places.
- **My work is interdisciplinary, and combines numerical relativity with early Universe cosmology.**