# Carlos Heredia Pimienta
## *University of Barcelona*

## PERSONAL DETAILS

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|---|---|
| *Skype:* | carlosherediapimienta |
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| *Github:* | github.com/carlosherediapimienta |
| *Born:* | 28.07.1993 |

## EDUCATION

**Ph.D. in Physics**                                                 Oct/20 - Mar/23

*University of Barcelona (UB), Barcelona, Spain*

- Category: Mathematical Physics
- Ph.D.'s thesis: Nonlocal Lagrangian formalism
- Supervisor: Prof. Josep Llosa

**Master in Astrophysics, Particle Physics and Cosmology**          Sep/16 - Jun/17

*University of Barcelona (UB), Barcelona, Spain*

- Master's thesis: Hamilton-Jacobi formalism for non-involutive systems
- Supervisor: Prof. Josep M. Pons

**Bachelor's Degree in Physics**                                     Sep/11 - Jan/16

*University of Barcelona (UB), Barcelona, Spain*

## WORK EXPERIENCE

**Assistant Professor at University of Barcelona** *(Department: FQA)*          Aug/22 - Today

*Barcelona, Spain*

    Teaching: Subjects related to mathematics, physics and numerical methods.

**Research Collaborator at University of Barcelona** *(Group: ICCUB)*          Jan/18 - Oct/20

*Barcelona, Spain*

    Collaboration with Prof. Josep Llosa in a project based on the study of non-local theories.

**Business Intelligence Consultant at Ernst & Young** *(EY)*          Sep/17 - Oct/20

*Barcelona, Spain*

    Specialised in Machine Learning, Big Data and Data Analytics for the Hospitality industry.

**Research Collaborator at A. University of Barcelona** *(Group: IFAE)*          Jan/16 - Oct/16

*Barcelona, Spain*

    Collaboration with Prof. Oriol Pujolàs and Dr. Matteo Baggioli in a project based on the study of the conductive properties of graphene through holographic methods for condensed matter.

# PUBLICATIONS

**Infinite derivatives vs integral operators. The Moeller-Zwiebach paradox**
*Carlos Heredia and Josep Llosa [**arXiv:** 2302.00684 **(hep-th)**]*

**Nonlocal Lagrangian fields: Noether's theorem and Hamiltonian formalism**
*Carlos Heredia and Josep Llosa [**Phys. Rev. D 105** 126002]*

**Infinite-derivative linearized gravity in convolutional form**
*Carlos Heredia, Ivan Kolář, Josep Llosa, Francisco José Maldonado Torralba, and Anupam Mazumdar [**Class. Quantum Grav. 39** 085001]*

**Non-local Lagrangian Mechanics: Noether's theorem and Hamiltonian formalism**
*Carlos Heredia and Josep Llosa [**J. Phys. A: Math. Theor. 54** 425202]*

**Energy-momentum tensor for the electromagnetic field in a dispersive medium**
*Carlos Heredia and Josep Llosa [**J. Phys. Commun. 5** 055003]*

# POSTERS & TALKS

**Noether's theorem for non-local theories**
*Van Swinderen Institute (Anupam Mazumdar's group), University of Groningen*

**Noether's theorem for non-local Lagrangian mechanics**
*Cosmology Journal Club, University of Barcelona*

**Energy-momentum tensor for the electromagnetic field in a dispersive medium**
*HSE Study Center Voronovo, Moscow*

# TEACHING

**S23: Practical sessions of principles of Laboratory Practice - #363980**
*Electronic Engineering and Telecommunications, University of Barcelona*

**S23: Problems of Multivariable Calculus - #360570**
*Physics, University of Barcelona*

**F22: Problems of Calculus 1 - #366693**
*Biomedical engineering, University of Barcelona*

**F22: Problems of Calculus 1 - #360569**
*Physics, University of Barcelona*

**F22: Problems of Fundamentals of Mechanics - #360563**
*Physics, University of Barcelona*

# SUMMER/WINTER SCHOOLS

**Moscow International School of Physics 2020** *(Link)*                          Mar/20
*HSE Study Center Voronovo, Moscow*

**XIII Tonale Winter School in Cosmology** *(Link)*                          Dec/19
*University of Heidelberg, Passo del Tonale, Italy*

**TAE 2019 - COST Training School in High Energy Physics**  *(Link)*     Sep/19
*Centro de Ciencias de Benasque Pedro Pascual, Huesca, Spain*

## DISSEMINATION

**The beauty of symmetries**
*Severo Ochoa Coffee Talk, CIMNE, Polytechnic University of Catalonia*

## COURSES

**Complete Python Bootcamp: From Zero to Hero in Python** *(Link)*     Oct/20
*Udemy, Spain*

**Complete Guide to Tensorflow for Deep Learning with Python** *(Link)*     Oct/20
*Udemy, Spain*

**Machine Learning A-Z: Hands-On Python & R In Data Science** *(Link)*     Oct/20
*Udemy, Spain*

**The Complete SQL Bootcamp 2020: Go from Zero to Hero** *(Link)*     Oct/20
*Udemy, Spain*

**Data Science and Machine Learning Bootcamp with R** *(Link)*     May/20
*Udemy, Spain*

## LANGUAGES

**Spanish** *(mother tongue)*, **Catalan** *(mother tongue)*, **English** *(C1)*

## PROGRAMMING SKILLS

- Fortran 95 // Mathematica 10 // ABAP // R // SQL // Python

## FUNDINGS

**European Cooperation in Science and Technology (COST)**  *Cost - Funding*     2019