

## Curriculum Vitae et Studiorum

### Personal information

Nationality Italian  
Gender Female  
Place of birth Tagliacozzo, L'Aquila, Italy  
Citizenship Italian  
Personal homepage <https://argiarubeo.github.io/>

### Current Position

2018 -present Postdoctoral Research Fellow at University of Plymouth

### Education

2019 **Ph.D.** as winner of the "Hamilton Scholar" at Trinity College Dublin, Ireland  
Title *On the Symanzik improvement of gradient flow observables*  
Supervisor Prof. Stefan Sint

2013 **Master degree (Laurea Magistrale)** in Particle Physics from “Sapienza”, University of Rome  
Final mark 110/110  
Title *Numerical study of the  $q\bar{q}$  static potential in the temporal gauge*  
Supervisor Prof. Massimo Testa

3/2009 **Bachelor Degree (Laurea Triennale)** in Physics from “Sapienza”, University of Rome  
Title *Relativistic invariance of Dirac equation*  
Supervisor Prof. Massimo Testa

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## Research Interests

Physics Beyond the Standard Model

Scattering from the lattice, theoretical studies and applications to phenomenology

Theoretical aspects of lattice gauge theories

Algorithms and hardware for lattice QCD

Non-perturbative renormalization of QCD parameters

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## Teaching

- 2017 Teaching assistant for the undergraduate course of *Quantum Mechanics II*. Degree program in Physics, Trinity College Dublin (TCD), Ireland. (One semester)
- 2016 Teaching assistant for the undergraduate course of *Quantum Mechanics*. Degree program in Physics, Trinity College Dublin (TCD), Ireland. (One semester)
- 2015 Tutorials in Linear Algebra for Science students at TCD, (10 hours);  
  
Tutorials in Quantum Mechanics for Physics students at TCD, (10 hours)

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## Talks and Posters

- 2018 Seminar at University of Plymouth
- 2018 Contribute Talk at the conference "High Performance Computing in Life sciences, Engineering, And Physics (HPC-LEAP)", Cambridge University (<http://www.damtp.cam.ac.uk/research/hep/conferences/hpcleapjuly18/>)
- 2018 Contribute Talk at the conference "Irish Quantum Foundations 2018 ", All Hallows Campus, Dublin City University (<https://www.dcu.ie/node/98866>)
- 2018 Contribute Talk at the workshop "Scattering from the lattice: applications to phenomenology and beyond", Trinity College Dublin (<https://indico.cern.ch/event/690702/>)
- 2018 Internal Transfer Talk 2018, Trinity College Dublin
- 2017 Internal Transfer Talk 2017, Trinity College Dublin
- 2016 Internal Transfer Talk 2016, Trinity College Dublin
- 2016 Poster at the conference "34th International Symposium on Lattice Field Theory", Southampton 2016 (<http://www.southampton.ac.uk/lattice2016/>)

2014 Talk at the conference "New Frontiers in Theoretical Physics", Cortona 2014 (<https://agenda.infn.it/conferenceDisplay.py?confId=7371>)

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## Conferences, Workshops and Schools

2017 *9th Odense Winter School on Theoretical Physics: Cracks and Blind Spots in the Standard Model*

Centre for Cosmology and Particle Physics Phenomenology (CP3-Origins), Odense, Denmark

2016 *Lectures on the Theory of Fundamental Interactions*

Galileo Galilei Institute for Theoretical Physics, Arcetri (Florence), Italy

*Irish Quantum Foundations 2016*. Maynooth University, Ireland

2015 *Lattice Practices 2015*

Jülich Supercomputing Centre (JSC), Forschungszentrum Jülich, Germany

*Irish Quantum Foundations 2015*

Dublin Institute for Advanced Studies (DIAS), Dublin, Ireland

*Scientific Challenges and Big Computing*

Higgs Centre for Theoretical Physics, Edinburgh, UK

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## Publications

### to appear

Title *On the Symanzik improvement of gradient flow observables*  
Authors *A. Rubeo , S. Sint*

### 06/2019 PhD Thesis

Title *On the Symanzik improvement of gradient flow observables*  
Authors *A. Rubeo*  
<https://www.tara.tcd.ie/handle/2262/87265>

### 11/2016 PoS LATTICE 2016

Title *Perturbative  $O(a^2)$  effects in gradient flow couplings with SF and SF-open boundary conditions*  
Authors *A. Rubeo , S. Sint*  
PoS LATTICE (2016) 388  
<https://arxiv.org/abs/1612.07047>

### 08/2015 Physical Review D

Title *Color structure of Yang-Mills theory with static sources in a periodic box*  
Authors *L. Giusti, A.L. Guerrieri, S. Petrarca, A. Rubeo, M. Testa*  
hep-lat (2015)  
<http://link.aps.org/doi/10.1103/PhysRevD.92.034515>

11/2013 **PoS LATTICE 2013**

Title *q $\bar{q}$ -potential: a numerical study*

Authors *A.L. Guerrieri, S. Petrarca, A. Rubeo, M. Testa*

PoS LATTICE (2013) 470

<http://arxiv.org/pdf/1311.1325.pdf>

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## Computer skills

Programming C, C++, bash, Gnuplot, ROOT, Octave, LaTeX, MPI, openMP, Mathematica, Python

Operating systems Linux, Mac OsX and MS Windows

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## Languages

Italian native language

English proficient level (IELTS certificate)

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## Academic referees

Available upon request

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## Scientific dissemination

- 2018 Interviews at the IQF conference to *Prof. Duncan Haldane (Nobel Laureate in Physics 2016)* and *Dr. Sabine Hossenfelder* about their scientific experiences and thoughts.
- 2017 Interview for the Italian journal "OggiScienza" (<https://oggiscienza.it/2017/11/20/nuova-fisica-andare-oltre-modello-standard/>) as a researcher working abroad.
- 2017 Organizer of a particle Physics CERN masterclass at Trinity College Dublin together with Dr. M. Krstic Marinkovic .
- 2017 Videoconference with a Serbian city to explain my research together with my colleagues Dr. M. Krstic Marinkovic and Dr. D. Wilson in the context of Researchers' Night.
- 2016 Co-author of the chapter "Nanofisica e fisica delle particelle elementari" ("Nanophysics and Particle Physics") related to Particle Physics, in the book for highschool students "Fisica e realtà.blu 3" ("Physics and reality.blu 3") and revisor of the exercises of volume 1 and 2. Publishing company "Zanichelli"
- 2015 As a winner applicant for the Thesis-in-3 event, I have presented my PhD project, in the context of "*Discover Research Dublin, Sept 25th 2015*".

I participated in a particle Physics masterclass event for secondary school students, explaining and helping students in a data-analysis exercise organized by CERN.

2010 I was among the founders of the magazine “*accastampato*”, a journal of scientific divulgation currently distributed in free prints to high schools in Italy ([www.accastampato.it](http://www.accastampato.it)).

I collaborated with “*Frascati Scienza*” for “*European Researchers’ Night 2010*”

2009 I collaborated as a scientific advisor in the organization of the Science Festival “*Il Cielo di Argoli* ”, Tagliacozzo (AQ)