

# Adrien Florio

PhD

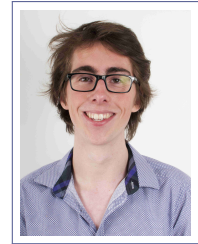
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🌐 [afloriosite.wordpress.com](http://afloriosite.wordpress.com)

🌐 [cosmolattice.net](http://cosmolattice.net)

Age: 27 (03.04.1994)

Nationality: Swiss



## Current Position

2020- **Postdoctoral researcher**, Center for Nuclear Theory, Stony Brook, US.

## Education

2020 **PhD in Physics**, EPFL, Lausanne, Switzerland.

Supervisor: Pr. M. Shaposhnikov

2016 **MSc in Physics**, EPFL, Lausanne, Switzerland.

2016 **Minor in Mathematics**, EPFL, Lausanne, Switzerland.

2014 **BSc in Physics**, EPFL, Lausanne, Switzerland.

2014 **ERASMUS Exchange**, Imperial College London, London, United Kingdom.

2011 **Maturité Suisse**, Gymnase d'Yverdon, Cheseaux-Noréaz, Switzerland.

## Experience

2015 CERN internship CERN, Geneva

2 months internship with Dr. T. Pieloni and Dr. X. Buffat. Development of a new Poisson solver for the COMBI multiparticle tracking software.

## Organizing Committees

2021 • Stony Brook *"Chirality, Vorticity and Magnetic Field in Heavy Ion Collisions"*

## Teaching

2019- Master students supervision

- Alexandra Tchalakian, EPFL (2019-2020)
- José Matos, EPFL/Porto (2020-2021)
- Frédéric Duc, EPFL (2020-2021)

2016-2019 Teaching Assistant

- General Relativity and Cosmology for 1st year Master students
- Quantum Mechanics III for 1st year Master students
- Remedial General Physics for 1st year Bachelor students

2017 Teaching Toolkits

1 day workshop to improve teaching skills, EPFL's Teaching Support Centre.

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## Computing Skills

C/C++ 2 semester course on C++ and object-oriented programming, with a 1 semester practical project. Course on computational physics. Worked on a particle tracking code at CERN and on Lattice QCD simulations. Developed an open-source modern C++ Expression Template field theory library, available at *cosmolattice.net*.

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MPI/OpenMP Term course on parallel computing. Parallelised field theory simulations.

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Python Good knowledge of the language. Mainly used to treat and analyse data.

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Julia Some experience with the language, actively learning.

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Bash Relatively good scripting knowledge.

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Mathematica Mainly used for analytical computation, good knowledge.

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## Languages

French Mother tongue

English Fluent

CAE in 2014

German B1-B2

Italian Good written and oral comprehension

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## Talks

- 2021 ● BNL Nuclear theory seminar "*Gibbs entropy from entanglement in electric quench*"
- Quark confinement and hadron spectrum 2021
- SEWM2021
- 2021 ● Asymptotic safety seminar series "*Searching for a critical point in 5D*"
- Seminar, Saclay, IHES *SU(2)*"

- 2021 • Seminar, Chennai, IMSC *"CosmoLattice"*
- 2020 • Seminar, Bielefeld University *"Abelian Finite Temperature Chiral Charge"*
- 2019 • Seminar, Basel University *"Dynamics"*
- Seminar, INT, Seattle
  - Seminar, UChicago
  - Lunch Seminar, Stony Brook
  - RIKKEN Lunch Seminar, Brookhaven National Lab
  - Informal Seminar, NYU
  - Seminar, IFIC, Valencia
  - CosmoCoffee, CERN
- 2019 • Informal talk, Imperial College London *"Schwinger Pair-Production from Padé-Borel Reconstruction"*
- 2018 • Lattice2018, MichiganU *"Real Time Evolution of  $U(1)$  Chiral Charge"*
- 2018 • Seminar, DESY Zeuthen *"Open vs Periodic Boundary Conditions in the Deconfined Phase"*
- Lattice Seminar, CERN
- 2017 • Lattice2017, Granada *"Thermal Simulations, Open Boundary Conditions and Switches"*
- HISS, Dubna
- 2016 • Bielefeld University, Bielefeld *"Open-Boundary Conditions and Sampling of the Topological Charge"*
- 2016 • CERN, Geneva *"COMBI, Improved Field Solvers"*

## Publications

A. Florio and D. E. Kharzeev, "Gibbs entropy from entanglement in electric quenches," Phys. Rev. D **104** (2021) no.5, 056021 doi:10.1103/PhysRevD.104.056021, [arXiv:2106.00838 [hep-th]].

A. Florio, J. M. V. P. Lopes, J. Matos and J. Penedones, "Searching for continuous phase transitions in 5D  $SU(2)$  lattice gauge theory," [arXiv:2103.15242 [hep-lat]].

D. G. Figueroa, A. Florio, F. Torrenti and W. Valkenburg, "CosmoLattice," [arXiv:2102.01031 [astro-ph.CO]].

D. G. Figueroa, A. Florio, F. Torrenti and W. Valkenburg, "The art of simulating the early Universe – Part I," JCAP 2021 (2021) 35 doi:10.1088/1475-7516/2021/04/035[arXiv:2006.15122 [astro-ph.CO]].

A. Florio, "Schwinger pair production from Padé-Borel reconstruction," Phys. Rev. D **101** (2020) no.1, 013007 doi:10.1103/PhysRevD.101.013007 [arXiv:1911.03489 [hep-th]].

D. G. Figueroa, A. Florio and M. Shaposhnikov, "Chiral charge dynamics in Abelian gauge theories at finite temperature," JHEP 1910 (2019) 142 doi:10.1007/JHEP10(2019)142 [arXiv:1904.11892 [hep-th]].

A. Florio, O. Kaczmarek and L. Mazur, "Open-Boundary Conditions in the Deconfined Phase," Eur. Phys. J. C **79** (2019) no.12, 1039 doi:10.1140/epjc/s10052-019-7564-z [arXiv:1903.02894 [hep-lat]].

A. Florio, " $U(1)$  Vacuum, Chern-Simons Diffusion and Real-Time Simulations," PoS LATTICE 2018 (2018) 044 doi:10.22323/1.334.0044 [arXiv:1810.13410 [hep-th]].

Y. Burnier, A. Florio, O. Kaczmarek and L. Mazur, "Thermal Simulations, Open Boundary Conditions and Switches," EPJ Web Conf. 175 (2018) 07004 doi:10.1051/epjconf/201817507004 [arXiv:1710.06472 [hep-lat]].

X. Buffat, J. Barranco, A. Florio, T. Pieloni and C. Tambasco, "Simulation of Head-on Beam-Beam Limitations in Future High Energy Colliders," doi:10.18429/JACoW-IPAC2016-TUPMW009 (2016)

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