

Data-analysis experimental particle physicist

Simon Berlendis

🏠 18, Rue des Savoies
01710, Thoiry, France

☎ (+33) 06 38 66 42 14
✉ simon.berlendis@cern.ch

Research experiences

- 2018-Now** **Research associate position**, University of Arizona, at Tucson, Arizona, USA
- Search for the standard-model production of 4 top quarks ($t\bar{t}t\bar{t}$)
 - Analysis coordinator and author of the internal note and the public paper
 - $t\bar{t}t\bar{t}$ modelling studies, $t\bar{t}$ background estimation, profile likelihood fit
 - Search for long-lived particles decaying in the muon spectrometer
 - Analysis coordinator, Monte Carlo simulation, Background estimation
 - Validation and integration of MicroMegas front-end boards for the New Small Wheel
- 2014-2017** **PhD Thesis**, Laboratoire de Physique Subatomique et Cosmologie (LPSC), at Grenoble
- Search for supersymmetric processes in same-sign and three leptons
 - Signal implementation based on R -parity violating supersymmetry
 - Monte-Carlo modelling, Signal region optimization and result interpretation
 - Search for exotic production of top quarks in same-sign and three leptons
 - Charge mis-identification background estimation based on data-driven method
 - Monte Carlo modelling studies in V +jets and in $t\bar{t}$ and Pythia shower tuning
- 2014** **Master Thesis**, Laboratoire de Physique Subatomique et Cosmologie (LPSC), at Grenoble
- Event reconstruction and top-quark polarisation prospective measurement

Education

- | | |
|---|---|
| <i>PhD degree</i>
2014-2017 | Université Grenoble-Alpes, France
Experimental Particle Physics |
| <i>Master degree</i>
2013-2014 | Université Grenoble-Alpes, France
Subatomic Physics and Astroparticle
Class rank: 1 st / 18 |
| <i>Engineer's degree</i>
2011-2014 | Grenoble-INP Phelma,
Physics and Nanoscience
Mention "très bien" |
| <i>Classes Préparatoires</i>
2009-2011 | CPE Lyon, France
Physics and Chemistry
CCP rank: 405 th /4854 |
| <i>Baccalauréat</i> 2009 | Lycée Val de Durance, Pertuis |

Skills

Computing

C/C++, python, root, bash
LaTeX, git, svn, html

Analysis related

AnalysisTop, SUSYTools
TRexFitter, HistFitter, TMVA

Monte-Carlo related

MadGraph, Sherpa
Pythia, Herwig
Rivet, Professor

Language

French
English (fluent)
Spanish (basic)

Selected Publications

- *Evidence for $t\bar{t}t\bar{t}$ production in the multilepton final state in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector*
The ATLAS collaboration, accepted for pub. by Eur. Phys. J. C (2020), [arXiv:2007.14858](#)
- *Search for supersymmetry in final states with two same-sign or three leptons and jet using 36 fb^{-1} of $\sqrt{s} = 13$ TeV pp collision data with the ATLAS detector*
The ATLAS collaboration, J. High Energ. Phys. **1908** (2019) 121 [\[Link\]](#)
- *Search for new phenomena in events with same-charge leptons and b-jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector*
The ATLAS collaboration, J. High Energ. Phys. **1812** (2018) 039 [\[Link\]](#)

International Conferences

<i>Presentation</i> <i>Sept 2019</i>	Monte-Carlo modeling in single top quark and in other rare top-related processes TOP 2019 , Beijing, China [Slides]
<i>Presentation</i> <i>August 2017</i>	Search for pair production of new particles in ATLAS ICNFP 2017 , Crete, Greece [Slides]
<i>Poster</i> <i>June 2016</i>	Search for exotic production of top quarks decaying into same-sign leptons in ATLAS LHCP 2016 , Lund, Sweden [Slides]

Teaching and Supervision

<i>2018-Now</i>	Supervision of three graduate students from the University of Arizona <ul style="list-style-type: none">• <i>Rachel Lindley</i>: search for the production of 4 top quarks• <i>Hao Zhou</i>: search for long-lived particles in the muon spectrometer• <i>Micheal Schott</i>: search for long-lived particles in the muon spectrometer
<i>2015-2017</i>	Teaching assistant in physics (128 hours during 2 years) Optics and Mechanic physics, Grenoble-INP CPP, France

Outreach

<i>Sept 2019</i>	Journée porte ouverte du CERN (CERN Open days) Activity related to the ATLAS experiment
<i>April 2017</i>	Ma Thèse en 180 secondes [YouTube video] , Grenoble, France PhD subject presentation in 3 minutes
<i>2015 & 2016</i>	CERN International Masterclasses (x2) for high school students, LPSC Grenoble Particle physics introduction & helps in data analysis sessions Fête de la science (science day) (x2) for the general public, LPSC Grenoble Laboratory guide & particle physics introduction