

FLORIAN JONAS

+33 7 67 99 97 01 · florian.jonas@cern.ch · www.florianjonas.com

WORK EXPERIENCE

Sept. 2023 - now	Postdoctoral Scholar Department of Physics University of California Berkeley / LBNL	Berkeley, US/Geneva, CH
Oct 2018 Aug 2023	Scientific assistant Insitute for Nuclear Physics Westfälische Wilhelms-Universität	Münster, DE/Geneva, CH
Jul-Sep 2017	Summer Student European Organization for Nuclear Research (CERN)	Geneva, CH
Jan-Mar 2016 & Jul-Sep 2016	Student assistant Institute for Theoretical Physics Westfälische Wilhelms-Universität	Münster, DE
Jul 2012	Internship German Aerospace Center (DLR)	Cologne, DE

EDUCATION

2018- Aug 2023	Doctor of Natural Sciences (Physics) Westfälische Wilhelms-Universität with distinction (summa cum laude) <i>Thesis: Probing the initial state of heavy-ion collisions with isolated prompt photons</i> Supervision: C. Klein-Boesing, A. Andronic, C. Loizides; stationed at CERN in collaboration with Oak Ridge National Lab (ORNL)	Geneva, CH
2016-2018	Master of Science (Physics) Westfälische Wilhelms-Universität <i>Thesis: Measurement of ω and η mesons via their three pion decay with ALICE in pp collisions at $\sqrt{s} = 7\text{TeV}$</i> · Grade: 1.0 (with distinction)	Münster, DE
2013-2016	Bachelor of Science (Physics) Westfälische Wilhelms-Universität <i>Thesis: Simulations for optimization of ω-reconstruction at ALICE</i> · Grade: 2.0	Münster, DE
2005-2013	Abitur Freiherr-vom-Stein Gymnasium Advanced courses in physics and mathematics. The school was bilingual, which means some classes were taught in English. · Grade: 1.4	Hamm, DE
Jul-Dec 2010	Student exchange Otumoetai College	Tauranga, NZ

LANGUAGES

GERMAN · Mother tongue
 ENGLISH · Fluent in spoken and written form
 FRENCH · Basic (simple words & phrases only)

COMPUTING SKILLS

WORD PROCESSING · L^AT_EX, MS Office
 CODING · C++, ROOT, PYTHON
 OTHER · PYTHIA, MCFM
 JETPHOX, GEANT
 INCNLO, CEPH
 SLURM

TALKS & CONFERENCES

- 2023 · Talk at Joint ECFA-NuPECC-APPEC activity workshop: Synergies between the EIC and the LHC
Connecting forward LHC and the EIC: the ALICE FoCal upgrade
- 2023 · Poster at 156th LHCC Meeting
The ALICE Forward Calorimeter (FoCal) upgrade: physics program and prototype performance
- 2023 · Talk & Poster at 798. WE-Heraeus-Seminar: Forward Physics and QCD at the LHC and EIC
Measuring prompt photon production with the ALICE Forward Calorimeter (FoCal) upgrade
- 2023 · Talk at **30th Quark Matter Conference**
Forward Calorimeter (FoCal): Physics and performance
- 2023 · Talk at **11th Hard Probes Conference**
Probing the initial state of nuclear collisions using isolated prompt photons with ALICE
- 2022 · Talk at ALICE USA meeting
Isolated photon production in pp and p-Pb collisions at $\sqrt{s_{NN}} = 8$ TeV and 8.16 TeV
- 2022 · Talk at Forward QCD: open questions and future directions (workshop)
Prompt photon physics with the ALICE FoCal
- 2022 · Invited speaker at Oak Ridge National Laboratory physics division seminar
Probing the initial state of nuclear collisions with isolated photons at the LHC
- 2022 · Invited speaker at Institute for nuclear physics (Münster) seminar
Probing the initial state of nuclear collisions with isolated photons at the LHC
- 2020 · Talk at **40th ICHEP conference**
 ω and η' production in proton-proton collisions at the LHC measured with ALICE
- 2019 · Talk at DPG Spring Meeting
Measurement of ω mesons in pp collisions at $\sqrt{s} = 7$ TeV
- 2019 · Poster at 137th LHCC meeting
Measurement of ω and η mesons via their three pion decay with ALICE in pp collisions at $\sqrt{s} = 7$ TeV
- 2018 · Poster at DPG Spring Meeting
Measurement of ω and η mesons via their three pion decay with ALICE in pp collisions at $\sqrt{s} = 7$ TeV
- 2016 · Talk at the ALICE Germany Meeting
Kinematic cuts for ω reconstruction in ALICE

PUBLICATIONS

publications with major contributions:

- 2024 · ALICE collaboration, *Technical Design Report of the ALICE Forward Calorimeter (FoCal)*
CERN-LHCC-2024-004 ; ALICE-TDR-022
Contribution: test beam contributions & prompt photon performance studies
- 2023 · FoCal collaboration, *Performance of the electromagnetic and hadronic prototype segments of the ALICE Forward Calorimeter*
arXiv:2311.07413 (submitted to JINST)
Contribution: participation in test beam activities & event reconstruction
- 2021 · Jonas, F. & Loizides, C. *Centrality dependence of electroweak boson production in PbPb collisions at the LHC.*
Phys. Rev. C 104, 044905
Contribution: main analyzer & main paper writer
- 2020 · Acharya, S. et al. *Production of ω mesons in pp collisions at $\sqrt{s} = 7$ TeV*
Eur. Phys. J. C 80, 1130
Contribution: main analyzer & main paper writer

publications in preparation:

- 2024 · ALICE collaboration, *Measurement of isolated prompt photon production in pp and p-Pb collisions with ALICE*
PC member
- 2024 · ALICE collaboration, *Measurement of the inclusive isolated-photon production cross section in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV*
PC member, approved in physics forum
- 2024 · ALICE collaboration, *Measurements of the production of W^\pm and Z^0 bosons in pp collisions at $\sqrt{s} = 13$ TeV*
PC member, approved in physics forum
- 2023 · ALICE collaboration, *Measurement of ω meson production in pp collisions at $\sqrt{s} = 13$ TeV*
PC member, approved in physics forum, CR1 concluded

public notes / analysis notes:

- 2023 · ALICE collaboration, *Physics performance of the ALICE Forward Calorimeter upgrade*
ALICE-PUBLIC-2023-004
Contribution: simulation studies of prompt photon production & response of detector to photons
- 2023 · ALICE collaboration, *Physics of the ALICE Forward Calorimeter upgrade*
ALICE-PUBLIC-2023-001
Contribution: simulation studies of prompt photon production
- 2022 · Jonas, F., *Measurement of isolated photon production in pp and p-Pb collisions at $\sqrt{s} = 8$ TeV and $\sqrt{s_{NN}} = 8.16$ TeV*
ALICE Analysis Note (ANA-1298)
Contribution: main analyzer & main writer
- 2020 · ALICE collaboration, *Letter of Intent: A Forward Calorimeter (FoCal) in the ALICE experiment*
CERN-LHCC-2020-009, LHCC-I-036
Contribution: π^0 reconstruction efficiency studies, beampipe conversion studies
- 2020 · Jonas, F., *Measurement of ω meson production at mid-rapidity with ALICE in pp collisions at $\sqrt{s} = 7$ TeV*
ALICE Analysis Note (ANA-1029)
Contribution: main analyzer & main writer

PROJECTS / ACTIVITIES

Management · ALICE Junior Representative: representing the interest of juniors within the organization; discussions with ALICE management and collaboration board; organization of events and workshops

Physics · measurement of isolated prompt photon production in pp and p-Pb collisions in $\sqrt{s_{NN}} = 8.16$ TeV with ALICE; employing multiple approaches for purity determination (template fitting & ABCD method); usage of JETPHOX and INCNLO program to obtain theory calculations

Physics · reconstruction of ω vector mesons in pp collisions with ALICE: first developments of analysis task which has been used in several subsequent analyses of ω and η' production; analysis required reconstruction and identification of charged tracks as well as photon reconstruction using three different methods (PHOS, EMCal and conversions in tracker)

Physics · Studying jet energy loss through Bayesian inference with the JETSCAPE framework. Focus on the implementation of photon observables in the JETSCAPE framework (ongoing)

Physics/phenomenology · study of centrality dependence of electroweak boson production using MCFM program and Glauber model investigating possible centrality biases in measurements and impact of the nuclear neutron skin on W^\pm production (see publication)

Physics/phenomenology · working together with a PhD student from the theory department of the University of Muenster to study γ -jet correlations in ALICE FoCal and TPC acceptance using POWHEG NLO program and Pythia shower algorithms

Computing · leading role in developing the new ALICE EMCal analysis framework for the ALICE online-offline computing system (O^2); porting of EMCal clusterizer; implementation of crucial features such as cluster-track matching using kd-tree algorithm

Computing · system administrator of a computing cluster used by the ORNL group at CERN. The cluster includes a distributed file system (ceph) and job management (slurm)

Performance · multiple studies for expected performance of ALICE Forward Calorimeter (FoCal) Upgrade: study of π^0 reconstruction efficiency; study of effect of beam pipe on conversions at forward rapidity; studies on expected performance of isolated prompt photon measurements with FoCal

Performance · ongoing efforts in quality assurance and calibration of ALICE EMCal detector; detailed studies of electron E/p and impact of different EMCal nonlinearity parametrizations; multiple contributions to EMCal performance paper (soon to be published)

Performance · trigger coordinator for EMCal Run 3 efforts

Hardware · assisting role during multiple accesses for repairs on EMCal detector; assisting role during repairs on Transition Radiation Detector (TRD) modules during LS2; participation in multiple test beam activities for the FoCal prototype at CERN PS and SPS

Outreach · supervision of summer student; moderator for multiple ALICE masterclasses for school students; ALICE tour guide during LS2

Service task · train operator for ALICE analysis trains, steering and managing the access of analyses to the ALICE datasets and computing time

CERTIFICATES & AWARDS

Best poster prize · 798. WE-Heraeus-Seminar: Forward Physics and QCD at the LHC and EIC

English · ESOL Level 2 Certificate · University of Cambridge

French · Attestation de réussite DELF · Level A2

May 5, 2024