

Dr Alexander Deisting

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Employment

Senior postdoctoral researcher, Johannes Gutenberg-Universität Mainz

Mainz, DE

Group of Prof. Dr. Uwe Oberlack

May. 2022 - today

- R&D towards electrodes for future dual-phase xenon time projection chambers (TPCs)
- Upgrade of the local dual-phase TPC with Silicon photomultipliers
- Contributing to XENONnT, XLZD, DRD2 and Darwin
- Supervision of the lab work of PhD, Master's and Bachelor's students

Postdoctoral researcher, Royal Holloway University of London

London, UK

Group of Prof. Dr. Jocelyn Monroe

Aug. 2018 - Apr. 2022

- R&D on high pressure TPCs for neutrino physics
- Development of optical (camera) readout and hybrid charge and optical readout for TPCs
- Tests of TPC hardware for their suitability as parts of future DUNE near detector high pressure gas TPC
- Development of a novel, low cost sensor to detect lead in drinking water
- Full supervision of Master's and Bachelor's students, full co-supervision of a PhD student
- Supervision of the lab work of PhD, Master's and Bachelor's students

Postdoctoral researcher, Gesellschaft für Schwerionenforschung

Darmstadt, DE / Heidelberg, DE

Group of Prof. Dr. Silvia Masciocchi

Mar. 2018 - Jul. 2018

- Discharge studies with gas electron multiplier (GEMs) foils
- Supervision of Master's and Bachelor's students
- Commissioning of the GEM testing facilities for the ALICE TPC's GEMs mass production

Education

Ruprecht-Karls-Universität Heidelberg (Heidelberg, DE / CERN, CH)

[\[10.11588/heidok.00024133\]](#)

Dr. rer. nat. (Physics); Supervisor: Prof. Dr. Silvia Masciocchi

Aug. 2014 - Feb. 2018

Thesis title: "Measurements of ion mobility and GEM discharge studies for the upgrade of the ALICE time projection chamber"

Rheinische Friedrich-Wilhelms-Universität Bonn (Bonn, DE)

[\[BONN-IB-2014-10\]](#)

Master of Science in Physics; Supervisor: Prof. Dr. Klaus Desch

Oct. 2012 - May. 2014

Thesis title: "Readout and Analysis of the Induced Ion Signal of an InGrid Detector"

Rheinische Friedrich-Wilhelms-Universität Bonn (Bonn, DE)

[\[2012-02\]](#)

Bachelor of Science in Physics; Supervisor: Prof. Dr. Klaus Desch

Oct. 2008 - Sept. 2012

Thesis title: "Reconstruction of charge depositions due to primary electrons in a GEM-Pixel-TPC with an algorithm used for applications in astrophysics" (translation, the thesis is written in German with the title: "Rekonstruktionen von Ladungsdepositionen in einer GEM-Pixel-TPC mit einem Algorithmus aus der Astronomie")

Grants and Funding Awards

STFC Early Technology Development Capital Funding

152000£; [\[ST/W005727/1\]](#)

"Infrastructure Request for High Pressure Gas TPC Development Studies for the DUNE Near Detector", together with G.

Barker, X. Lu, University of Warwick

2022

AIDAinnova	66 666 £
European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 101004761. Funding secured at Royal Holloway University of London (<i>cf.</i> Leadership and committee work: AIDAinnova proposal preparations)	2021
Royal Holloway, University of London, <i>Strategic knowledge exchange grant</i>	20 000 £
Project title: "Explore the commercialisation of a device with a CMOS sensor at its heart for dosimetry applications"	2020
Nuclear Security Sciences Network, Personal Development Grant	1 000 £
Funding to visit the 2020 IEEE in Manchester	2019

Leadership positions and committee work

ECFA DRD2: "Liquid detectors collaboration"	[ECFA DRD2 Proposal]
Part of the proposal preparation team and now co-lead of the task "Amplification structures, charge-to-light conversion and granular light readout of dual phase detectors" together with K. Mavrokoridis, University of Liverpool	Nov. 2022 - today
Darwin collaboration	[Darwin]
Co-lead of the Darwin WG6: "LXe Properties and Calibration" together with R. Budnik, Weizmann Institute of Science	May. 2023 - today
AIDAinnova, Work package 7	[e.g. AIDAinnova Indico]
Lead of Task 4.2: "A high pressure gas time projection chamber with optical readout for neutrino physics"	2021 - 2022
2019 - 2020: Lead of the task: "Hybrid readout high pressure gas TPC for neutrino physics" during the AIDAinnova proposal preparations (INFRAINN0V-04-2020) [AIDAinnova]	
"PlomBox: a Device for Open-Source Metrology to Fight Lead Contamination in Drinking Water"	[EP/T015586/1, PlomBox]
Work package coordinator: "Mobile Phone Data Acquisition"; Leading the development of a mobile phone controlled DAQ system, and of the analysis server set-up for the future PlomBox devices	2020 - 2022
DUNE near detector high pressure gas TPC development	
Leading the tests in the UK of an ALICE outer readout chamber to assert its suitability for high pressure operation	2019 - 2022
Development of a high pressure gas time projection chamber with hybrid charge and optical readout	
Co-leading the research effort with the 1 m ³ high pressure gas TPC prototype	2018 - 2022
"Materia Oscura: Instrumentation Development to Observe the Invisible"	[ST/R002908/1]
Leading the research exploring lead detection in drinking water using CMOS sensors	2018 - 2020

Publications

To see a full list of all my publications you may check [the inspirehep author search as linked here](#). In total I have 183 published papers with an h-index of 79. This includes the collaboration papers of the ALICE, Darwin, DUNE, XENONnT, and XLZD collaborations I have worked with in the past or I am still working with today. The list below gives papers and reports with major contributions from my side.

Journal papers

For these publications I am the lead- and corresponding author, the first author is indicated in bold. (In most cases the author list is ordered alphabetically.) I had critical contributions to the development of the measurement, the commissioning of the set-up, the data taking, the analysis, the paper writing, and the organisation of the internal review processes of the publications in this section.

- [1] **A. Deisting**. "Commissioning of a hybrid readout TPC test set-up and gas gain simulations", *J. Phys.: Conf. Ser.* 2374 012145; DOI: [\[10.1088/1742-6596/2374/1/012145\]](#), arXiv: [\[2201.02464\]](#);
- [2] **A. Deisting**, *et al.* "Commissioning of a High Pressure Time Projection Chamber with Optical Readout", *Instruments* 2021, 5(2), 22; DOI: [\[10.3390/instruments5020022\]](#);
- [3] **A. Aguilar-Arevalo**, *et al.* "Dosimetry and Calorimetry Performance of a Scientific CMOS Camera for Environmental Monitoring", *Sensors* 2020, 20(20), 5746; DOI: [\[10.3390/s20205746\]](#), arXiv: [\[2009.11227\]](#);
- [4] **A. Deisting**, *et al.* "Secondary discharge studies in single and multi GEM structures", *NIM A*, 2019, 937, pp. 168-180; DOI: [\[10.1016/j.nima.2019.05.057\]](#), arXiv: [\[1901.06035\]](#);
- [5] **A. Deisting** for the HPTPC working groups. "Commissioning and beam test of a high pressure time projection chamber", *NIM A*, 2020, 958, pp. 162153; DOI: [\[10.1016/j.nima.2019.04.107\]](#);

- [6] **A. Deisting**, C. Garabatos and A. Szabo. “Ion mobility measurements in Ar-CO₂, Ne-CO₂, and Ne-CO₂-N₂ mixtures, and the effect of water contents”, *NIM A*, 2018, 904, pp. 1-8; DOI: [10.1016/j.nima.2018.07.008], arXiv: [1804.10288]
- [7] **A. Deisting** and C. Garabatos. “Discharge and stability studies for the new readout chambers of the upgraded ALICE TPC”, 2017 *JINST* 12 C05017; DOI: [10.1088/1748-0221/12/05/C05017], arXiv: [1705.02150];
- [8] **A. Deisting**, C. Garabatos, A. Szabo and D. Vranic. “Measurements of ion mobility in argon and neon based gas mixtures”, *NIM A*, 2017, 845, pp. 215-217 ; DOI: [10.1016/j.nima.2016.06.093], arXiv: [1603.07638];
- [9] **A. Deisting** for the ALICE collaboration. “Status of the R&D activities for the upgrade of the ALICE TPC”, *EPJ Web Conf.* 174 (2018) 01006; DOI: [10.1051/epjconf/201817401006], arXiv: [1601.02183];

Selected co-authored publications and reports

- [10] **A. Dias, M. Alvarez, Y. Gándola, A. Deisting, et al.** “PlomBOX: a low cost bioassay for the sensitive detection of lead in drinking water”, *Commun Eng* 4, 2 (2025); DOI: [10.1038/s44172-024-00337-7];
A. Dias and me were lead developers for the PlomApp and database, and I worked with her on the analysis reported in the Results section. I contributed to the writing and editing of the paper. Furthermore, A. Dias was a PhD student I co-supervised and the paper reports much of her work.
- [11] **E. Aprile, et al. (XENON Collaboration)**. “First Indication of Solar ⁸B Neutrinos via Coherent Elastic Neutrino-Nucleus Scattering with XENONnT”, *Phys. Rev. Lett.* 133, 191002; DOI: [10.1103/PhysRevLett.133.191002], arXiv: [2408.02877];
Review of some of the analysis for the paper, collaboration reviews of the paper, and detector shifts.
- [12] **J. Aalbers, et al. (XLZD Collaboration)**. “The XLZD Design Book: Towards the Next-Generation Liquid Xenon Observatory for Dark Matter and Neutrino Physics”, arXiv: [2410.17137];
Small contributions to the writing of the report, discussions within XLZD, and collaboration review of the finished publication
- [13] **S. Acharya, et al.** “ALICE upgrades during the LHC Long Shutdown 2”, 2024 *JINST* 19 P05062; DOI: [10.1088/1748-0221/19/05/P05062], arXiv: [2302.01238];
Critical contributions to the ALICE TPC upgrade works reported as part of this paper.
- [14] **A. Ritchie-Yates, A. Deisting, et al.** “First operation of an ALICE OROC operated in high pressure Ar-CO₂ and Ar-CH₄”, *Eur. Phys. J. C* 83, 1139 (2023); DOI: [10.1140/epjc/s10052-023-12297-x], arXiv: [2305.08822];
Critical contributions to the development of the measurement, the commissioning of the set-up, the data taking, the analysis, the paper writing, and the organisation of the internal review processes. The first and corresponding author is a PhD student (A. Ritchie-Yates) whom I supervised in the laboratory.
- [15] **A. Lowe, et al.** “ARIADNE⁺: Large scale demonstration of fast optical readout for dual-phase LArTPCs at the CERN Neutrino Platform” *Phys. Sci. Forum* 2023 8(1) 46; DOI: [10.3390/psf2023008046], arXiv: [2301.02530];
Contributions to the commissioning of the set-up, and the internal review processes.
- [16] **A. Aguilar-Arevalo, et al.** “Volume reduction of water samples to increase sensitivity for radioassay of lead contamination”, *Appl Water Sci* 12, 151 (2022); DOI: [10.1007/s13201-022-01669-5], arXiv: [2205.04147];
Critical contributions to the development of the measurement, and the internal review processes. The lead and corresponding author is a PhD student (A. Dias) whom I co-supervised.
- [17] **The DUNE collaboration**. “A Gaseous Argon-Based Near Detector to Enhance the Physics Capabilities of DUNE”, 2022 *Snowmass Summer Study*; arXiv: [2203.06281];
Contributions to the planning discussions for the report and the internal review processes.
- [18] **A. Aguilar-Arevalo, et al.** “PlomBOX – development of a low-cost CMOS device for environmental monitoring”, *Contribution to CEST* 2021; arXiv: [2201.03348];
Co-coordinator of the research effort, critical contributions to the development of the methodology, the analysis framework and the internal review processes. The lead and corresponding author is a PhD student (A. Dias) whom I co-supervised.
- [19] **J. Adolfsson, et al.** “The upgrade of the ALICE TPC with GEMs and continuous readout”, 2021 *JINST* 16 P03022; DOI: [10.1088/1748-0221/16/03/p03022], arXiv: [2012.09518];
Critical contributions to the development of some of the measurements within (and the corresponding commissioning of small scale set-ups, data taking, and analysis) as well as the organisation of beam times. Contributions to the general reported hardware development and the internal review processes.
- [20] **S. B. Jones, et al.** “Off-Axis Characterisation of the CERN T10 Beam for low Momentum Proton Measurements with a High Pressure Gas Time Projection Chamber”, *Instruments* 2020, 4(3), 21; DOI: [10.3390/instruments4030021], arXiv: [2007.15609];
Critical contributions to the detector commissioning, the data taking, the development of the analysis framework and the internal review process
- [21] **A. Deisting**. “Towards a low cost lead assay technique for drinking water using CMOS sensors”, 2019 *IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)* pp. 1-2; DOI: [10.1109/NSS/MIC42101.2019.9059987]; arXiv: [2001.01777];
I am the main and corresponding author of this conference paper and my contributions to the development of the measurement, the commissioning of the set-up, the data taking, and the data analysis were critical.
- [22] **A. V. Waldron, A. Deisting**. “A High Pressure TPC with Optical Readout”, 2019 *IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)* pp. 1-2; DOI: [10.1109/NSS/MIC42101.2019.9059848];
Critical contributions to the development of the measurement, the commissioning of the set-up, the data taking, the analysis, and the internal review processes.

- [23] **A. Mathis** for the ALICE TPC Upgrade collaboration. “Particle identification studies with a full-size 4-GEM prototype for the ALICE TPC upgrade”, *NIMA*, 2018, 903 pp. 215-223; DOI: [\[10.1016/j.nima.2018.06.084\]](https://doi.org/10.1016/j.nima.2018.06.084), arXiv: [\[1805.03234\]](https://arxiv.org/abs/1805.03234); Critical contributions to the organisation of the test beam and the data taking. Contributions to the planning discussions and the internal review process.
- [24] **The ALICE Collaboration**. “Addendum to the Technical Design Report for the Upgrade of the ALICE Time Projection Chamber”, *ALICE-TDR-016-ADD-1*; CDS: [\[CERN-LHCC-2015-002\]](https://cds.cern.ch/record/261002); Critical contributions to the organisation of the test beams, the data taking, smaller experiments in the lab as well as the data analysis for test-beams and small prototypes.

Talks, seminars and posters

Conference talk	“Tests of wire electrodes with the Mainz high resolution scanning set-up”, <i>DPG-Frühjahrstagung</i> (2024), [Book of abstracts]
Invited talk	“Lessons learned from current gas TPCs”, <i>DUNE Near Detector Phase II workshop</i> (2023), [Indico]
Conference talk	“A high resolution scanning set-up for defect detection on electrodes”, <i>XeSAT2023</i> (2023), [Indico]
Conference talk	“A high resolution scanning set-up for defect detection on electrodes”, <i>DPG-Frühjahrstagung SMuK</i> (2023), [Book of abstracts]
Conference talk	“Optical TPC: current and future developments”, <i>New Horizons in Time Projection Chambers</i> (2020), [Indico]
Conference talk	“Commissioning and beam test of a high pressure time projection chamber”, <i>15th Vienna conference on Instrumentation</i> (2019), [Indico]
Invited talk	“Secondary discharge phenomena in GEM detectors”, Overview talk for the ALICE TPC Upgrade Collaboration, <i>MPGD stability work-shop</i> (2018), [Indico]
Group report	“Towards the mass production of readout chambers for the upgrade of the ALICE TPC”, <i>DPG-Frühjahrestagung, Hadronen und Kerne</i> (2017), [Book of abstracts]
Conference talk	“Discharge and stability studies for the readout chambers of the upgraded ALICE TPC”, <i>International Conference on Instrumentation for Colliding Beam Physics (INSTR17)</i> (2017), [Indico]
Conference talk	“Measurements of ion mobility in argon- and neon-based gas mixtures”, <i>DPG-Frühjahrestagung, Hadronen und Kerne</i> (2016), [Book of abstracts]
Conference talk	“Status of the R&D activities for the upgrade of the ALICE TPC” <i>MPGD – 4th Conference on Micro-Pattern Gaseous Detectors</i> (2015), [Indico]
Conference talk	“Untersuchung des induzierten Ionen-Signales bei Gasverstärkung von Elektronen mit Hilfe eines InGrid”, <i>DPG-Frühjahrestagung, Teilchenphysik</i> (2014), [Book of abstracts]
Seminar	“Towards the next xenon filled dark matter experiment”, <i>EMMI Nuclear and Quark Matter Seminar</i> (2023)
Seminar	“A gas TPC for neutrino physics”, <i>ETAP Seminar at University of Mainz</i> (2022)
Seminar	“Under pressure: A Time Projection Chamber for neutrino interaction measurements”, <i>High energy physics seminar at Technische Universität München</i> (2019), Munich (DE)
Seminar	“The ALICE Time Projection Chamber and its upgrade” <i>Particle Physics Seminar at Imperial College London</i> (2019)
Seminar	“Taking a Time Projection Chamber to high pressure” <i>High energy physics seminar at the University College London</i> (2018)
Seminar	“The ALICE Time Projection Chamber and its upgrade” <i>Particle Physics Seminar at the Royal Holloway University London</i> (2018)
Poster	“The DARWIN experiment and the development of assay techniques for large electrodes” <i>16th Pisa Meeting on Advanced Detectors</i> (2024), [Conference web page]
Poster	“A hybrid high pressure time projection chamber for neutrino experiments”, <i>TIPP 2021 International Conference on Technology and Instrumentation in Particle Physics</i> (2021), [Indico]
Poster	“Towards a low cost lead assay technique for drinking water using CMOS sensors” <i>2019 IEEE Nuclear Science Symposium and Medical Imaging Conference</i> (2019), [Conference web page]
Poster	“Measurement of ion mobility in Argon and Neon based gas mixtures”, <i>14th Vienna conference on Instrumentation</i> (2016), [Indico]

Talk	“Electrodes status” <i>XENONnT collaboration meeting, Paris</i> (2023)
Talk	“Mainz Optical Scan Facility” <i>XENONnT collaboration meeting, L'Aquila</i> (2023)
Talk	“OROC test stand and testing at RHUL & Imperial College London”, <i>6th DUNE near detector workshop</i> (2019), [Indico]
Talk	“Progress on outer Readout chamber testing at Royal Holloway, University of London & Imperial College London”, <i>DUNE collaboration meeting</i> (2020)
Talk	“Discharge studies with single GEMs” <i>RD51 mini week</i> (2016)
Talk	“Measurements of ion mobility in argon- and neon-based gas mixtures”, <i>RD51 collaboration meeting</i> (2016)
Talk	“Discharge studies with an inner readout chamber prototype”, <i>DPG-Frühjahrestagung, Hadronen und Kerne</i> (2015), [Book of abstracts]
Talk	“ALICE setup in H4: Stability measurement of readout chamber prototype for the ALICE TPC”, <i>RD51 mini week</i> (2014)
Talk	“Status of the ALICE TPC upgrade and beam-time prospects”, <i>14th RD51 collaboration meeting</i> (2014)

Supervised students

The following list shows all Bachelor (3 to 6 months), Master (one year) and doctoral (3.5 years+) students I have supervised during their research work. In addition I list “Summer placements”, students I supervised during their ~6 weeks internship in our research group. “Lab supervisor” refers to students who I was not the official supervisor of, but who I supervised during the bulk of their research work. Abbreviations: JGU – Johannes Gutenberg-Universität Mainz (DE), Royal Holloway, University of London (GB) – RHUL, University of Heidelberg (DE) – HD.

Constantin Szyska, Master of Science (Lab Supervisor)	<i>JGU</i>
Recommissioning of the MainzTPC and first Liquid Xenon Observation using Commercially Available Cameras	2023 - 2024
Shumit Arumoy Mitra, Bachelor of Science (Lab Supervisor)	<i>JGU</i>
Corona Discharge as a Tool for Identifying Thin Wire Surface Irregularities	2022 - 2023
Adriana Dias, PhD (Co-supervisor)	<i>RHUL</i>
Detector Development for Particle Physics and Applications to Environmental Monitoring (preliminary)	2019 - 2022
Ash Ritchie-Yates, PhD (Lab supervisor)	<i>RHUL</i>
Development of readout structures for high pressure gas time projection chambers (preliminary)	2019 - 2022
Joshua Eeles, Master by Research (Supervisor)	<i>RHUL</i>
Commissioning and Operating an OROC based High Pressure Time Projection Chamber	2020 - 2021
Asim Aslam, Summer placement (Supervisor)	<i>RHUL</i>
A gaseous proportional counter built from a conventional aluminium beverage can (Essentially doing this: arXiv:1509.02379)	2021
Annora Sundararajan, Bachelor of Science (Supervisor)	<i>RHUL</i>
Commissioning of a Camera System for the Optical Readout of a Time Projection Chamber	2019 - 2020
Adam Tarrant, Master by Research (Supervisor)	<i>RHUL</i>
Development of Gas Electron Multipliers for hybrid-readout gaseous Time Projection Chambers in Future Neutrino Experiments	2019 - 2020
Matthew Loxton, Bachelor of Science (Supervisor)	<i>RHUL</i>
Simulation of Electroluminescence in Noble Gases at Different Pressures for Gaseous Detectors with Optical Read-out	2018 - 2019
Bogdan Mihail Blidaru, Master of Science (Lab supervisor)	<i>HD</i>
Discharge propagation in double-GEM detectors	2017 – 2018
Alexandra Datz, Bachelor of Science (Lab supervisor)	<i>HD</i>
Studies on Secondary Discharges and their Mitigation with a two GEM Detector	2016 – 2017

Lecture course contributions and teaching assistant roles

Abbreviations: JGU – Johannes Gutenberg-Universität Mainz (DE), Royal Holloway, University of London (GB) – RHUL, University of Heidelberg (DE) – HD, University of Bonn (DE) – Bonn.

Astroparticle Physics	<i>JGU</i>
Masters course, contributing lectures as substitute	2023
Particle detectors	<i>JGU</i>
Masters course, contributing lectures as substitute	2022
PH1920: Physics of the Universe	<i>RHUL</i>
Contributing all the astrophysics and cosmology lectures and exercises	2022
PH3170/4170: C++ and Object Oriented Programming	<i>RHUL</i>
Contributing one lecture and supervising a third of the students on their final coding projects	2021
PH1920: Physics of the Universe	<i>RHUL</i>
Contributing one astrophysics lecture and the corresponding exercises	2021
PH3170/4170: C++ and Object Oriented Programming	<i>RHUL</i>
Contributing one lecture and supervising a third of the students on their final coding projects	2020
PH1920: Physics of the Universe	<i>RHUL</i>
Contributing one astrophysics lecture and the corresponding exercises	2020
PH1920: Physics of the Universe	<i>RHUL</i>
Contributing one astrophysics lecture and the corresponding exercises	2019

Collaborations

XENONnT

Part of ongoing TPC repair effort, development of new electrodes, maintenance of the neutron veto May 2022 - today

XLZD (XENONnT-LZ-Darwin) and Darwin

XLZD: Development of electrode assay techniques; Darwin: WG6 working group co-leader (cf. Leadership and Darwin: May 2022 - today and XLZD: committee work: Darwin) Sept. 2024 - today

ARIADNE+

DAQ control GUI development and contributions to the assembly of the light readout plane of the $2 \times 2 \text{ m}^2$ demonstrator of TimePix3 readout of a dual-phase argon TPC 2022

DUNE

Near detector high pressure gas TPC development; Since May 2022 only minor contributions 2019 - today

ALICE and ALICE TPC upgrade collaboration

PhD thesis experiment (cf. Education), Development of new readout chambers allowing for continuous readout of the ALICE TPC, on-site ALICE TPC expert, beam-test coordination 2014 - 2018

Volunteer Services

Prisma+ Ombudsteam

[[Ombudsteam](#)]

I was part of a group of early career researches working on a code-of-conduct for the excellence cluster and I am now serving as a member of the Ombudsteam itself. 2024 - today

Workshop "How to... PhD"

The excellence cluster Prisma+ organised work-shops for Master Students on the brink of moving into the PhD. I was one of the speakers in that event. 2024

XENON/COSI journal club

I initiated and now organise the journal club of the XENON/COSI group in Mainz. 2022 - today

Review activities

I review regularly articles for JINST, EPJC, NIM A, MDPI instruments, universe and sensors. ongoing

HEP seminar at Royal Holloway

Sole organiser of the seminars of the high energy physics group at Royal Holloway, University of London 2019 - 2022

Outreach

Pupils workshops on PMT operation

Measurements of Cherenkov radiation of a PMT immersed in water, simple data analysis with python

JGU

2022 - today

Mainzer Wissenschaftsmarkt

Particle physics outreach to the general public in the city centre of Mainz

JGU

2023 - today

Outreach talk to pupils

“Dunkle Materie & das XENONnT Experiment” (“Dark Matter and the XENONnT experiment”), International Cosmic

Day

JGU

2022

Englefield Green Community Hub: “Holloway Hour”

Presenting our research – together with two PhD students – to the local community in Englefield Green

RHUL

2022

Girls into Physics

Lecture on detector development, Outreach event to inspire schoolkids to study physics after school.

RHUL

2021

Above a list of my recent outreach activities. In addition I do regular lab tours for undergraduate students and pupils in our laboratories here in Mainz. I occasionally showed visitors of the general public the ALICE experiment during my time at CERN. During my undergraduate at University of Bonn I participated in the “Physik show” (<https://www.physikshow.uni-bonn.de/>).

Training

Feb. 2025	Appointment for Professorship: Learning from Experience
Dec. 2024	Diversity Ombuds Team Training
Oct. 2024	Effective Visual Communication of Science
Jan. 2024	Why Diversity Matters in Science Careers
Nov. 2023	Workshop: “How to... professorship”
Oct. 2023	Workshop: “How to proposal writing”
Oct. 2023	The European Research Council – Prestigious Research Grants for Cutting-Edge Basic Research

Skills

Instrumentation	Gaseous detectors, cryogenic liquids, signal amplification regions in gaseous or noble liquid detectors (<i>e.g.</i> GEMs, wires)
Programming and data analysis	Python, C++, C, Matlab
Professional Softwares	COMSOL, Garfield++, CERN root
Languages	German (Native), English (fluent, daily use), French(B1-B2)

Awards and Honours

2025	2025 Breakthrough Prize in Fundamental Physics: I am among the ALICE collaborators who received the breakthrough price for their work between 2015 and July 15, 2024. During the first few years I worked on the ALICE TPC upgrade, to enable the experiment to partake in LHC run 3 data taking in a successful way.
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