James Philip Iddon

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Applied Physicist with over 7 years of experience in high-energy physics experiments and advanced silicon technology. Proven track record in the research, development, construction, and commissioning of cutting-edge silicon pixel tracking detectors. Expertise in system testing, data acquisition software development, and coordination of operations.

Skills

operations • coordination • silicon chip characterisation • data acquisition system development • software development • system testing and integration • data analysis and visualisation • professional communication in international environments

`Python • C++ • Bash • Linux (Arch, Debian, Ubuntu) • Git • LaTeX • Markdown • html • css • Matplotlib • Plotly • Seaborn • Pandas • ROOT`

Professional Experience

Senior Applied Fellow (Detector Operations)
CERN - Geneva, CH
Jul 2022 - present

- Coordinated operations for the ATLAS Pixel detector, ensuring maximum up-time and detector safety to support 24/7 LHC data acquisition.
- Developed and maintained data acquisition software (C++ / Python) with continuous integration testing, enhancing system responsiveness.
- Designed and implemented a software package to improve DAQ software flexibility, facilitating faster problem resolution by detector experts.
- Management and training of 24/7 shift crew • On-call detector expert • Organisation of weekly meetings • Representation of the group in daily ATLAS meetings.
- Held key positions: Pixel Run Coordinator (Oct 2023 - Present), Pixel Deputy Run Coordinator (Apr 2023 - Oct 2023).

Doctoral Researcher
University of Liverpool / CERN
Oct 2017 - Jul 2022

- Construction, commissioning, and performance measurements of the ALICE Inner Tracking System Upgrade, the largest Monolithic Active Pixel Sensor (MAPS) tracking detector ever built.
- Achieved a 98% yield in constructing and testing novel CMOS MAPS detector modules and staves in clean rooms at the University of Liverpool and Daresbury Laboratory.
- Developed system testing software (Python) for the fully integrated tracking system at CERN, verifying the performance of 13 billion channels.
- Conducted the first measurement of detection efficiency using 5 million cosmic muon tracks, confirming system capabilities.

Qualifications

PhD in Applied Physics
University of Liverpool / CERN
Oct 2017 - Jul 2022

- Title: Construction, Commissioning and Performance Measurements of the Inner Tracking System Upgrade of ALICE at the LHC.
- Defended in June 2022. Shortlisted for ALICE thesis award.

MPHYS Physics
University of Liverpool
Sep 2013 - Jul 2017

- Grade: First Class
- Masters project: ‘Inner Tracking System Upgrade of the ALICE Experiment at the LHC’, characterisation of silicon CMOS MAPS chips.

A Levels: Maths (A), Physics (A), Chemistry (B) • 11 GCSEs B or higher • Full driving license

Publications

All publications as an ALICE and ATLAS author can be found via my Inspire ID: 1618293, or via ORCID

Relevant Publications:

- The ALICE collaboration, ALICE upgrades during the LHC Long Shutdown 2, JINST, 2024
- J. P. Iddon on behalf of the ATLAS collaboration, Operational experience and performance with the ATLAS Pixel detector at the Large Hadron Collider at CERN, Nuclear Instruments and Methods in Physics Research Section A, 2024
- ALICE ITS project, First demonstration of in-beam performance of bent Monolithic Active Pixel Sensors, Nuclear Instruments and Methods in Physics Research Section A, 2022
- D. Colella on behalf of the ALICE collaboration, ALICE ITS upgrade for LHC Run 3: commissioning in the laboratory, P roceedings of International Conference on Technology and Instrumentation in Particle Physics (TIPP), 2021
- J. P. Iddon on behalf of the ALICE collaboration, Commissioning of the new ALICE Inner Tracking System, Journal of Instrumentation, 2020
- A. Velure on behalf of the ALICE collaboration, Integration, Commissioning and First Experience of ALICE ITS Control and Readout Electronics, Proceedings of Science, 2019
- M. Buckland on behalf of the ALICE collaboration, Series Production and Test of Hybrid Modules for the ALICE ITS Upgrade, Proceedings of Science, 2019

External Talks

- Operational Experience and Performance with the ATLAS Pixel detector at the Large Hadron Collider at CERN, HSTD13, Vancouver, Dec 2023
- Realising the ALICE ITS Upgrade, IOP Nuclear Colloquium, Remote, Nov 2021
- Performance Measurements from Cosmic Muon Data using the Outer Barrel of the New ALICE Inner Tracking System, PSD12, Birmingham Sept 2021
- Upgrade and Commissioning of the ITS Upgrade of ALICE, INSTR'20, Novosibirsk, Feb 2020
- Entering the precision era of hot QCD measurements, IOP18, Glasgow, Apr 2018