

James Philip Iddon

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Applied Physicist with over 8 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 with international stakeholders

Python • C++ • Bash • Linux • Git • Docker • LaTeX • Markdown • html • css • Pandas • ROOT • html • css

Professional Experience

Applied Physicist (Staff)

CERN - Geneva, CH

Mar 2025 - present

- Applied Physicist for ATLAS ITk Pixel, the largest silicon tracking system ever designed.
- Focussed primarily on the orchestration of the functional electrical testing for the integration of the Outer Barrel of ITk Pixel.

Applied Physicist (Senior Applied Fellow)

CERN - Geneva, CH

Jul 2022 - Feb 2025

- 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.
- Pixel Run Coordinator (Oct 2023 - Oct 2024) during the hadronic collider record breaking year of 2024, and deputy for the six months prior.

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 the 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.