James Philip Iddon

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Applied Physicist with 8+ years of experience in high-energy physics and advanced silicon technologies. Proven expertise in designing, building, and operating state-of-the-art silicon pixel tracking detectors. Skilled in system testing, data acquisition software, and coordinating complex operations under high-pressure conditions. Known for diagnosing and resolving critical issues quickly and effectively.

Skills

Technical: Python (8yr) • C++ (5yr) • Hardware-software • V&V • CI/CD • Docker • Bash • Git • Linux
System Engineering: Data acquisition system development • System testing • System integration
Communication & Coordination: International team operations • DevOps team coordination
Code Quality: Code review workflows • Static analysis tools

Professional Experience

Applied Physicist (Staff)
CERN - Geneva, CH Mar 2025 - present

- Applied Physicist for ATLAS ITk Pixel, the largest silicon tracking system ever designed.
- Focused primarily on the verification and validation of chip-level properties within the constructed system during 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 silicon 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 CI testing.
- Designed and implemented a software package to improve DAQ software flexibility.
- 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

- Constructed, commissioned, and took performance measurements of the ALICE Inner Tracking System Upgrade, the largest Monolithic Active Pixel Sensor (MAPS) tracking detector ever built.
- Developed system verification software (Python) for the fully integrated tracking system at CERN, verifying the performance of 13 billion channels.
- 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.
- 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.
- Focused on systems engineering, system integration, and verification & validation of complex detector systems.
- Defended in June 2022. Shortlisted for the ALICE thesis award.

MPHYS Physics
University of Liverpool Sep 2013 - Jul 2017

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

Full driving license • Spanish residence permit • English native speaker • French A1+