

Dr. James Philip Iddon

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Applied physicist working on the operations and readout software development of the [ATLAS](#) IBL and pixel detectors as a CERN senior applied fellow. Over 5 years experience in silicon pixel detector construction, commissioning and operation. Earned PhD working on the construction, commissioning and performance measurements of the [ALICE](#) ITS2.

Professional Experience

Senior Applied Fellow (Detector Operations)

Jul 2022 - present

[CERN](#) - Geneva, CH

- Responsible for operations and DAQ development of the ATLAS [pixel and IBL detectors](#), maximising acquisition of quality data from the 24/7 LHC running schedule by minimising dead time to below 0.1%.
- Designed a software package to increase the flexibility of the DAQ software and increase the speed with which detector experts can react to problems.
- Created a tool to monitor detector parameters over time, prompting systematic re-tunes and aiding the debugging process of problematic modules.
- Debugged and fixed detector modules with electrical, software, configuration or radiation-damaged-induced problems.
- Performed Pixel Run Manager shifts and act as an on-call detector expert.
- Currently Pixel Deputy Run Coordinator (6 month position).

PhD in Physics

Oct 2017 - Jul 2022

[University of Liverpool](#) / [CERN](#)

- Work concerned with the construction, commissioning and performance measurements of the [Inner Tracking System Upgrade of ALICE](#) at the LHC, the largest and most granular Monolithic Active Pixel Sensor (MAPS) tracking detector ever built.
- Constructed and tested MAPS detector modules and staves in The University of Liverpool and Daresbury Laboratory clean rooms with a 98% yield.
- Wrote the testing software for the fully integrated tracking system at CERN and verified the performance of its 13 billion channels before installation around the LHC beam pipe.
- Gathered the first real particle tracks (5 million cosmic muons) and used these to make the first measurement of the detection efficiency, verifying the capability of the final system.
- Employed by both the University of Liverpool (2 years) and CERN (2.5 years).

Hitch Representative

Sep 2014 - Sep 2015

[Link Community Development](#)

- Leader of the Hitch charity scheme in Liverpool, helping 6 teams raise funding for Link Community Development by hitchhiking from Liverpool to Morocco.

Skills

Key skills: Silicon chip characterisation • DAQ system development • Debugging • Software • Hardware • Technical writing • Data analysis

Programming Languages: Python • C++

Data visualisation: Matplotlib • Plotly • Seaborn • Pandas • ROOT

Platforms/Tools: Linux • Git • LaTeX • Markdown

Education

PhD in Physics

Oct 2017 - Jul 2022

[University of Liverpool](#) / [CERN](#)

- 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.

- First Class
- Masters project: 'Inner Tracking System Upgrade of the ALICE Experiment at the LHC'.

Sep 2011 - Jul 2013

Publications

All publications as an ALICE and ATLAS author can be found via my Inspire ID: [1618293](#).

Relevant Publications:

- 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](#), Proceedings 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. Di Mauro on behalf of the ALICE collaboration, [The new inner tracking system for the ALICE upgrade at the LHC](#), Nuclear Instrumentation and Methods in Physics Research Section A, 2019
- 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

- [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