



University of Liverpool

POSTDOCTORAL RESEARCH ASSOCIATE IN PARTICLE PHYSICS

Job Ref: 012105

**Faculty: Science and Engineering, School of Physical Sciences,
Physics**

Location: University campus

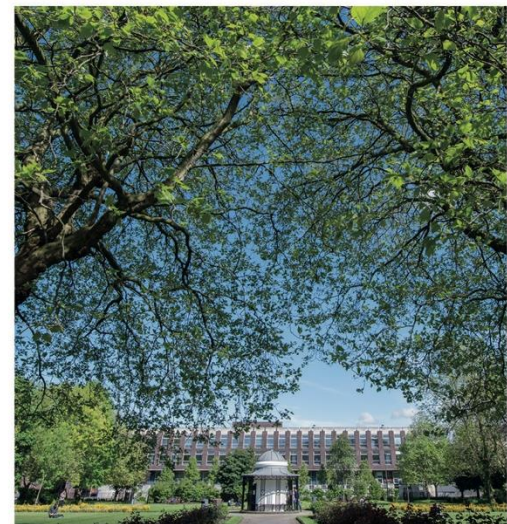
Grade: 7

Salary: £34,188 - £39,610 pa

Hours of Work: Full-Time

Tenure: Until 30 September 2022

Shortlisting and interview arrangements are the responsibility of the recruiting Department. Please contact the Head of the Liverpool Particle Physics group Professor Joost Vossebeld (email: Joost.Vossebeld@liverpool.ac.uk) for all enquiries.





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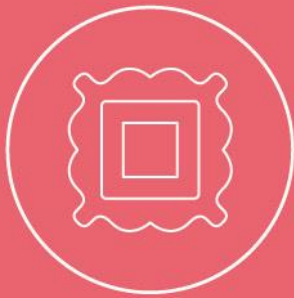


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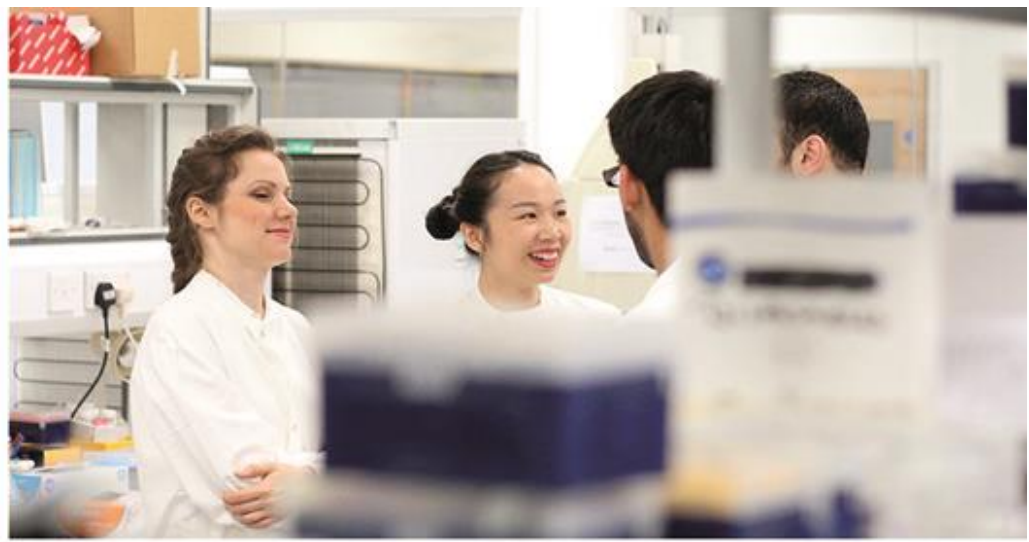
33,000

33,000 students, 7,500 of whom travel from all over the world to study here.





Job Role



THE POST

The University of Liverpool Particle Physics group is seeking to recruit a Postdoctoral Research Assistant to work on the ATLAS experiment. The successful candidate will work closely with the Liverpool ATLAS Higgs group, taking a leading role in the data analysis focused on one or more of the Higgs areas in which the group is active, including measurements of the SM Higgs boson properties, searches for anomalous Higgs decays and searches for extended Higgs sectors or dark sectors and searches for rare/exotics decay modes. During LHC Run 3 operation, the candidate will also contribute to the development and maintenance of the online DAQ software for the ATLAS SemiConductor Tracker (SCT).

Candidates must have a PhD in particle physics and experience in programming with C++ and python. The appointed candidate will have excellent communication skills and a good track record on independent particle physics analyses at the LHC. Experience in software development or expert support roles for detector operation in previous positions is desirable. Experience of data analysis, specifically in ATLAS, is also desirable.

The post will be filled as soon as possible after 01/10/2019 and is initially available until 30/09/2022, with the possibility to be continued. The normal place of work will be in Liverpool, but frequent travel, in particular to CERN, will be required. Key aspects of the role include:

- to take a leading role in data analysis for Higgs physics;
- to write papers and present work at international conferences;
- to work as part of the ATLAS SCT group to ensure the continued successful operation of this subdetector;
- to be an active member of the Liverpool ATLAS group and to work closely with PhD students in the group.

THE DEPARTMENT OF PHYSICS

The Physics Department, part of the School of Physical Sciences, was one of the first departments established in the University in 1881 and has a long tradition of excellence in physics research. The Department has scored highly in three consecutive reviews by HEFCE - the national Research Assessment Exercise (RAE). This considerable achievement reflects the Department's international reputation in the fields of particle physics, nuclear physics condensed matter physics and accelerator science.

The first Professor of Physics at Liverpool was Sir Oliver Lodge, who made the world's first public radio transmission in 1894. Two years later, Lodge demonstrated the use of X-ray photography by taking an image of a bullet in a boy's wrist. It was the first time an X-ray had been used for surgical purposes.

Professor Charles Glover Barkla's research into X-Rays won him the Nobel Prize for Physics in 1917, and Sir James Chadwick was awarded the Nobel Prize for Physics in 1935 for discovering the neutron. More recently, Sir Joseph Rotblat was awarded the Nobel Peace Prize in 1995 for his work on reducing the threat posed by nuclear weapons.

The Department is very well funded for research. There are currently approximately 44 academic staff who are responsible for the teaching and supervision of around 360 undergraduate and 170 postgraduate students. Over 40 full time research and computer physicists, professional, technical and electronic support staff together with extensive laboratory, workshop and design office facilities, support the research groups. Much of our research is carried out in the leading international centres for physics research: ILL (Grenoble), ESRF (Grenoble), ELETTRA (Trieste), CERN (Geneva), DESY (Hamburg), SLAC (Stanford), FNAL (Chicago), PSI (Villigen), JYFL (Jyväskylä), GANIL (Caen), GSI (Darmstadt) and ATLAS (Argonne).

The Department performs extremely well in both teaching and research as evidenced by excellent scores in teaching quality assessment, research assessment exercises and the national student survey. Further details of the department can be found on the web site: <http://www.liverpool.ac.uk/physics>.

THE PARTICLE PHYSICS GROUP

The Particle Physics group at the University of Liverpool is one of the UK's largest Particle Physics groups, holding research grants of around £22M and operating research infrastructure facilities worth £30M. With a staff complement of 54 leading academics, physicists, engineers and technologists, it trains around 60 post graduate research students. Particle Physics is a major theme for the University of Liverpool and the group has strong support at the School and Faculty levels. The group is active at CERN (ATLAS, LHC-b), at J-PARC (T2K, Super-K, Hyper-K), at SNOLAB (SNO+), at Fermilab (g-2, mu2e, SBND, DUNE), at PSI (mu3e) and is expanding into astroparticle physics (CTA), Dark Matter (LZ) and Dark Energy searches. In recent years the group has delivered the ATLAS SCT Endcap-C, the LHC-b VeLo, the ND280 ECAL for T2K and tracker stations the FNAL g-2 experiment. Currently the group is developing and building detectors and other systems for the ATLAS and LHC-b upgrades, for the Mu2e and Mu3e experiments, for LZ, for T2K and for SBND and DUNE.

The Particle Physics Group is also an international leader in the R&D on radiation-hard silicon detectors for future experiments and upgrades. This work is performed in the unique Liverpool Semiconductor Detector Centre (LSDC). The group is the main user of the Departmental precision manufacture workshop and the advanced materials facility. The group also has an in-house R&D programme on read out techniques for 2-phase Liquid Argon (LAr) detectors for future neutrino oscillation or dark matter experiments and on the development of atom interferometry for precision fundamental physics.

The group is heavily invested in the physics exploitation of various experiments, searching for new physics at the energy frontier and for dark matter, and in the study of flavour physics, with quarks and with neutral and charged leptons.

The Liverpool ATLAS group currently consists of 19 staff, including academics, postdoctoral and core researchers and engineering and technical staff, as well as 13 PhD students. The group works on high-profile physics analyses (Higgs physics, Supersymmetry and other beyond the SM searches and Standard Model physics), to the operation of the ATLAS SemiConductor Tracker and to various service tasks (flavour tagging, luminosity, Monte Carlo generators). The group makes leading contributions to the research and development work for the HL-LHC upgrades to the ATLAS experiment, in particular to the pixel and strip systems for the ITk Inner Tracker upgrade. The group will also play a major role in the construction of these future ATLAS detectors.

For further details on the Particle Physics group see: <https://www.liverpool.ac.uk/particle-physics>.

PERSON SPECIFICATION

Essential Criteria

Desirable Criteria

(Identified from – Application form, CV, Supporting Statement, Interview, References)

Experience

1.1	Experience in data analysis for particle physics at the LHC and evidence of the independent development of aspects of the data analysis or the data interpretation.	Experience with data analysis, specifically in ATLAS.
1.2	Has published scientific papers and presented work at international conferences.	Evidence of leadership, e.g. through the appointment to convening or coordinating roles of analyses working groups.
1.3		Has worked on the development of software for DAQ, or detector operation or monitoring.

Education, Qualifications and Training

2.1	A PhD in particle physics.	
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Skills, General and Special Knowledge

3.1	Working knowledge of C++ and Python.	Experience of detector operation, including a familiarity with DAQ software.
3.2	Good communication skills.	

Personal Attributes and Circumstances

4.1	Ability to work as part of a team	Effective communicator in large international collaborations
4.2	Ability to communicate effectively in the working environment.	
4.3	Willingness to travel.	
4.4	Willingness to work, on occasion, outside normal office hours when this is required for detector shifts or for work supporting detector operation.	



How to Apply



To apply for a Vacancy at the University you must register on the University of Liverpool E-Recruitment site, <https://recruit.liverpool.ac.uk>

If you have any queries relating to applying for a Vacancy please contact the Recruitment team by email – Jobs@liverpool.ac.uk

Acknowledging your application

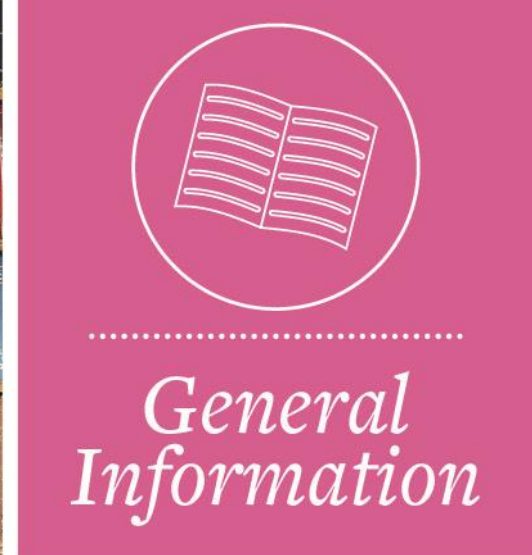
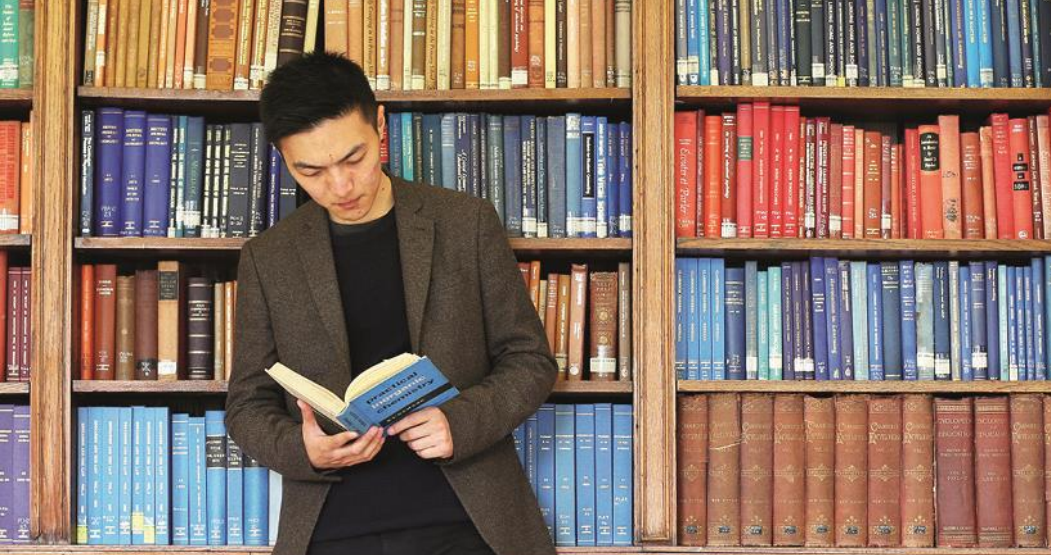
Once you have submitted your application you will receive an automatic acknowledgement. Your application can be viewed at any time in the Application History section of your E-Recruitment Account.

Outcome of applications

Vacancies at the University often attract a large number of candidates and it is not always possible to respond individually to every application. If you have not heard from the recruiting department within 6 weeks after the closing date please take it that your application has not been successful.



Micah
Liverpool



Asylum & Immigration

The University will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Please be aware that you will be required to bring your passport (and visa if applicable) to interview so that it can be copied and verified by a member of the Selection Panel. For posts requiring a recognised degree level or equivalent qualification, and where there is no suitable UK or European Economic Area candidate, the University will take the necessary steps to secure UK Border Agency permission for a foreign national to take up employment.

Should a candidate require a Certificate of Sponsorship in order to take up a post they will need to meet the UK Border Agency Tier 2 Points Based Criteria. A self assessment tool can be found on the UK Border Agency website at: www.ukba.homeoffice.gov.uk/pointscalculator

A candidate may also be required to undertake an English Language test prior to commencing work at the University. Details of Home Office approved tests can be found at: <https://www.gov.uk/government/publications/guidance-on-applying-for-uk-visa-approved-english-language-tests>. Further information on the eligibility criteria for Certificates of Sponsorship can be found at: www.ukba.homeoffice.gov.uk/employers/points

National Insurance Number

All employed individuals must possess a UK National Insurance Number. Further information and how to apply for a unique National Insurance Number can be found at: <https://www.gov.uk/apply-national-insurance-number>

Diversity and Equality

The University of Liverpool is committed to diversity and equality of opportunity. All employees and applicants for jobs will be considered on their abilities and will not be discriminated against on the grounds of age, caring responsibilities, colour, disability, employment status, gender, gender identity, marital status, nationality, race or ethnic origin, religion or belief, sexual orientation, socio-economic status or any other irrelevant distinction. Training is available to support career progression within the University.

Two Ticks Disability: Guaranteed Interview Scheme (GIS)

The University of Liverpool is committed to the employment of disabled people, and as part of our commitment, we guarantee to interview all disabled applicants who meet the essential criteria for a post and consider them on their abilities. If your disability prevents you completing the application form by the specified closing date, or when the vacancy closes early, due to a high volume of applications, please call the Recruitment Team to discuss alternative arrangements. <http://www.liv.ac.uk/working/jobvacancies/guaranteedinterviewscheme/>

Micah Liverpool Programme

The University of Liverpool supports the Liverpool Anglican Cathedral Micah Liverpool Programme. Applicants who have successfully completed the programme and meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the Micah Liverpool Programme directly. <http://www.liverpoolcathedral.org.uk/home/micah-liverpool.aspx>

GiveGetGo Volunteer Programme

Applicants who have successfully completed the GiveGetGo Volunteer Programme at the University in Partnership with the Transform Lives Company who meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the GiveGetGo Volunteer Programme directly.

<https://www.liverpool.ac.uk/working/jobvacancies/givegetgo/>

Accessibility

If you require copies of documentation in alternative formats, for example, large print or Braille, please contact jobs@liverpool.ac.uk or telephone 0151 794 6771.

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University of Liverpool, please let us know by contacting jobs@liverpool.ac.uk or telephone 0151 794 6771.

Pension

Information about The Occupational Pension Scheme associated with this appointment can be found [here](#). You are encouraged to familiarise yourself with the full particulars of the scheme.