

Research Associate in Particle Physics

STFC

Rutherford Laboratory, Didcot

Salary: £30,782-£33,459/£38318-£42,576 per annum

Contract Type: Fixed Term (3 years)

Hours: Full Time

Closing Date: 29th November 2019

About Us

The Science & Technology Facilities Council (STFC) is a partner organisation within UK Research and Innovation (UKRI). UKRI is a new entity that brings together nine partners to create an independent organisation with a strong voice for research and innovation, and a vision to ensure the UK maintains its world-leading position in research and innovation.

About the role

Applications are invited for two Research Associate positions in Experimental Particle Physics within the Particle Physics Department (PPD). The research positions are to work on the design and delivery of the data acquisition and trigger systems for the DUNE and CMS experiments. The posts will initially be for three years with the possibility of renewal for up to seven years.

PPD is one of the largest Particle Physics groups in the UK and has significant expertise in DAQ and triggering systems on a number of experiments both at the LHC (CMS and ATLAS) and at neutrino experiments (DUNE, T2K, HK). The PPD DUNE group works on both the DAQ and computing systems and includes the current DUNE DAQ Technical lead and the former DAQ Consortium lead as well as the current UK DUNE PI. The PPD CMS group led the design and construction of the CMS electromagnetic calorimeter endcaps. Having had significant involvement in the level 1 calorimeter trigger upgrade the group is now focused on the HL-LHC upgrade including the track finder for the replacement silicon tracker, the readout of the barrel electromagnetic calorimeter and the new Level 1 trigger. The group is also engaged in various physics analyses (e.g. SUSY Higgs and Z' boson searches).

The available posts are to undertake research on experiments to investigate the fundamental nature of matter. Trigger and DAQ systems are central to making the critical decisions on whether observed events have the potential to further advance our knowledge of the fundamental properties of matter. The focus of the positions is the DAQ and trigger system for the DUNE experiment, where at least, one post will be shared with the CMS upgrade project. The research skills required for the two projects are very similar. One post will focus on the early part of the DAQ chain and work with the hardware that hosts the FPGA that performs the initial data processing. This post will require firmware expertise and some knowledge of hardware systems. The second post will focus on system controls and the processing of the data once it is moved from the front-end cards to the system of PCs that form the backend of the DAQ chain.

About You

You must have a Ph.D., or equivalent, in Particle Physics or a degree or Ph.D. Electronic Engineering and must have a strong interest in Experimental Particle Physics. You will have experience in working on large particle physics experiments and knowledge of C++. You must have the ability to undertake original research and think logically. For the full essential criteria please follow the link below.

How to Apply

Applications should consist of a CV and a covering letter explaining why the candidate is suited to this position and the names and address of three referees. More information may be found at https://www.topcareer.jobs/Vacancy/irc251333_10116.aspx. As well as submitting applications online please send an email to claire.shepherd@stfc.ac.uk stating that an application has been submitted.

The closing date for applications is 30th November 2019, however early applications are encouraged as applicants will be reviewed and considered on an on-going basis.

For an informal discussion about this role please contact: Prof. Claire Shepherd-Themistocleous (claire.shepherd@stfc.ac.uk).