

## **Research Associate on the CMS experiment.**

Salary: Band D £31,931-£34,709 or Band E £39,748-£44,166 (Dependent on Experience)

3-year fixed term contract, with expectations of an extension.

Closing date for application is Thursday 23rd December 2021

Applications are invited for a Research Associate position in Experimental Particle Physics to work on trigger and data acquisition systems within the Particle Physics Department (PPD) at the STFC Rutherford Appleton Laboratory. The post will initially be for three years with the possibility of renewal.

PPD is one of the largest Particle Physics groups in the UK and the CMS group has been prominent on the CMS experiment since the start of the collaboration. For the initial CMS detector the design and construction of the electromagnetic calorimeter endcaps was led by PPD and the group also played a major role in the tracker readout. For phase I upgrades the group had significant activity on the level 1 calorimeter trigger upgrade. The group now has major involvement in the upgrade of the CMS detector for HL-LHC running and is working on the level 1 trigger upgrade, the track finder for the replacement silicon tracker and the readout of the barrel electromagnetic calorimeter. All of these activities involve fast electronics and the use of cutting edge FPGAs. Online software is a particular strength of the group. The group has a strong interest in physics beyond the standard model including a long history of work on searching for  $Z'$  bosons, various BSM Higgs bosons and numerous analyses that exploit the groups expertise on lepton reconstruction. A particular feature is the long-standing close collaboration with phenomenologists as part of the NExT Institute.

All of the PPD CMS group's upgrade activities involve cutting edge electronics and the use of FPGAs. Each of the activities is related to fast data processing to enable the first level of trigger decision in hardware. The successful applicant will work on the CMS level 1 trigger upgrade involving both online software and trigger algorithm development. The applicant must have or be about to receive a Ph.D. in Particle Physics or a similar field.

Applications should consist of a CV and a covering letter explaining why the candidate is suited to this position. The names and contact details of three referees should also be uploaded at the point of application. Applications online:

<https://careersportal.co.uk/UKRI-careers/jobs/research-associate-on-the-cms-experiment-1415>

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