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The World's Largest Experiment is 'Switched-On'

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On Wednesday 10th September Birmingham physicists, who have been involved in the preparation of the Large Hadron Collider (LHC) at CERN laboratory in Geneva, will be on tenterhooks as the world's largest and most complex experiment is switched on for the first time.

Scientists at the University of Birmingham's School of Physics and Astronomy are involved in two experiments at the LHC that, they hope, will help them to start uncovering the mysteries of the universe by measuring particle collisions under conditions that would have existed less than a millionth of a second after the Big Bang.

After 20 years of preparation, 5 billion pounds and hard work by over 10,000 scientists from over 70 countries, scientists will now be able to witness the fruits of their labour when the first beam of particles is sent through the 27 kilometre tunnel that has been built 100 metres below the French/Swiss border.

Once the experiment is underway, particles will be smashed together in specially built detectors. The Birmingham physicists have built and designed the sophisticated trigger electronics for the ATLAS and ALICE detectors that will help select the important particle collisions – scientists will then be able to concentrate on the data most likely to yield new discoveries.

Professor Pete Watkins, head of the particle physics group in the School of Physics and Astronomy and member of the ATLAS collaboration, says, 'We are very excited that soon we will be able to study the first proton-proton collisions at the CERN Large Hadron Collider with detectors that we have designed and constructed together with international collaborators over many years. These very energetic collisions will allow us to study many phenomena including the smallest particles inside the atom, the forces between them as well as searching for new particles such as the Higgs boson.'

Dr David Evans from the School of Physics and Astronomy, who is the ALICE UK project leader says, 'The 10th September marks the end of a 20 year journey, from concept to commissioning, and the beginning of a new and exciting journey of discovery. We have played a vital role in the past 20 years and are now looking forward to finding the answers to some of the most fundamental questions in physics.'

Ends

Notes to Editors

1. On Wednesday 10th September, the School of Physics and Astronomy will be holding a video conference live link-up with scientists at CERN at 1pm for an hour. School children who have taken part in projects within Physics and Astronomy will be invited to come along and ask questions of scientists over via the link-up at CERN.

2. The Science and Technology Facilities Council (STFC) has funded this research at Birmingham.

For further information

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