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# SA scientists involved in discovery of new subatomic particle

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By: **Keith Campbell** TEXT SIZE    
 4th July 2012

Several South African universities and one research institution are involved with the European Organisation for Nuclear Research (better known as CERN) in the SA-CERN programme and have been active participants in the search for the Higgs boson. They are the Universities of Cape Town, Johannesburg, Kwazulu-Natal, the Western Cape and the Witwatersrand, Rhodes University and the iThemba Laboratory for Accelerator Based Science (iThemba LABS).

Of these, the Universities of Cape Town, Johannesburg, Kwazulu-Natal and the Witwatersrand and iThemba LABS were partners in the Atlas experiment in the Large Hadron Collider (LHC). The Atlas instrument was one of the two detectors – the other being the Compact Muon Solenoid – which have discovered a new subatomic particle consistent with a Higgs boson, a finding announced by CERN on Wednesday.

“Discovery is the important word. That is confirmed,” said University of Johannesburg (UJ) Professor **Simon Connell**, leader of the UJ-Atlas team. “We are at a new beginning. The LHC may also shed light on the primordial state of matter, shortly after the Big Bang, and on dark matter and dark energy.” (Dark matter and dark energy together make up the bulk of the universe, but neither can yet be directly observed, hence their categorisation as “dark”.)

A local result of the creation of the SA-CERN programme has been the establishment of the South African computing grid, a combination of high performance computing clusters and fast networks. The South African grid formed part of the global network which processed data gathered by Atlas.

“Although we don’t have a crystal ball to predict the full benefits to science and society [from the discovery of the new particle], we note that most of today’s understanding of nature and the development of technology began with the discovery of now familiar particles like the electron,” highlighted Connell.

The LHC is located in an underground tunnel on the Franco-Swiss frontier, near Geneva, is some 27.36 km in circumference and cost about £2.6-billion.

Edited by: **Creamer Media Reporter**

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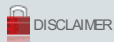
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