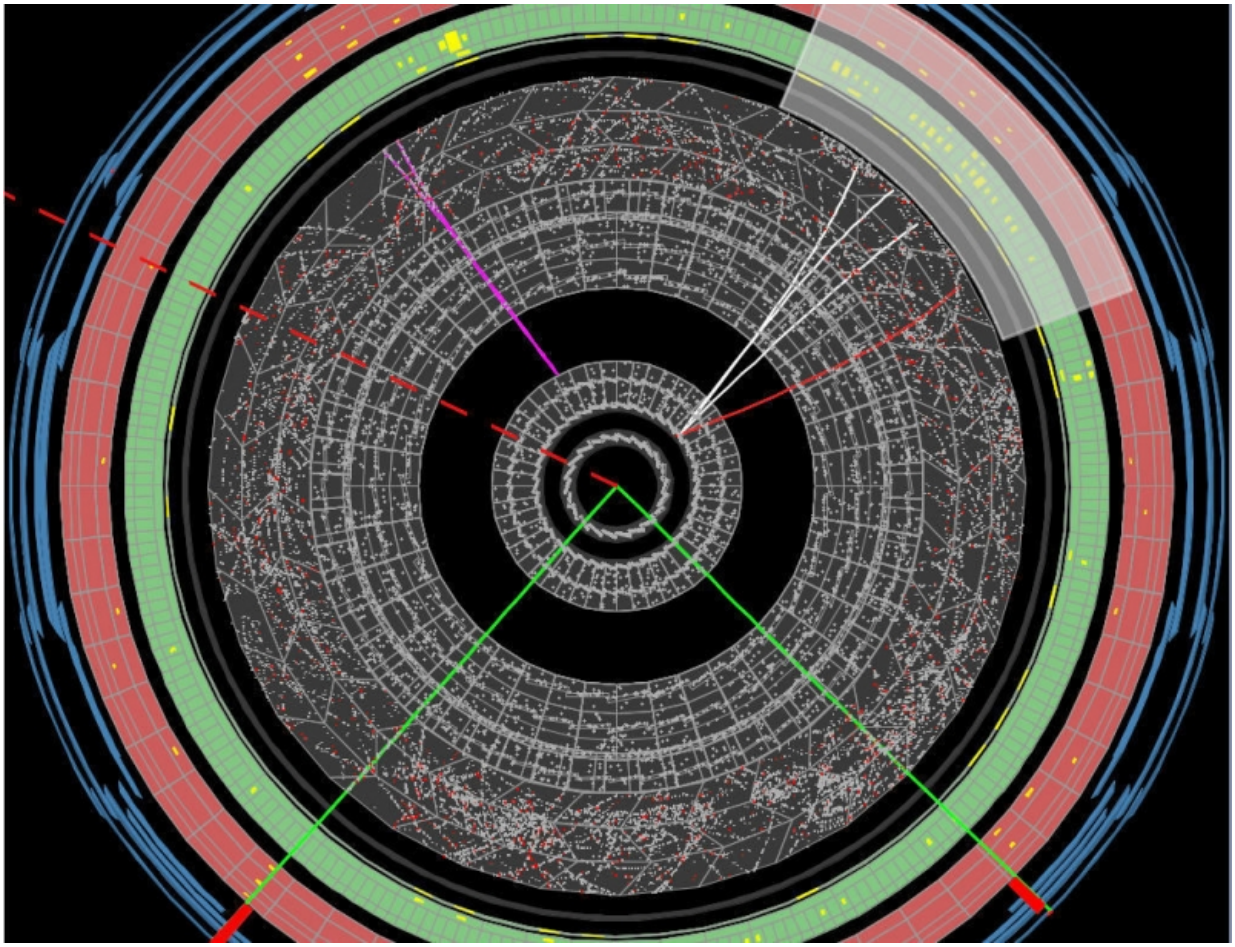
Public invited to help the Higgs find its siblings

July 5 2016, by Harriet Kim Jarlett



These images show how particles appear in the ATLAS detector. The lines show the paths of charged particles travelling away from a collision at the centre. Volunteers are looking for tracks appearing 'out of thin air' away from the centre. Credit: CERN

A citizen science project, called HiggsHunters gives everyone the chance to help search for the Higgs boson's relatives.

Volunteers are searching through thousands of images from the ATLAS experiment on the HiggsHunters.org (link is external) website, which makes use of the Zooniverse (link is external) citizen science platform.

They are looking for 'baby Higgs bosons', which leave a characteristic trace in the ATLAS detector.

This is the first time that images from the Large Hadron Collider have been examined on such a scale - 60,000 of the most interesting events were selected from collisions recorded throughout 2012 - the year of the Higgs boson discovery. About 20,000 of those collisions have been scanned so far, revealing interesting features.

"There are tasks – even in this high-tech world – where the human eye and the human brain simply win out," says Professor Alan Barr of the University of Oxford, who is leading the project.

Over the past two years, more than twenty thousand amateur scientists, from 179 countries, have been scouring images of LHC collisions, looking for as-yet unobserved particles.

Dr Will Kalderon, who has been working on the project says "We've been astounded both by the number of responses and ability of people to do this so well, I'm really excited to see what we might find".

If you're interested in participating in more citizen science, the LHC@home project is a volunteer computing platform where you donate idle time on your computer to help physicists compare theory with experiment, in the search for new fundamental particles and answers to questions about the Universe.

Today, July 4 2016, is the fourth birthday of the Higgs boson discovery. Here, a toy Higgs is sat on top of a birthday cake decorated with a HiggsHunter event display. On the blackboard behind is the process people are looking for - Higgs-strahlung. Credit: Will Kalderon/CERN

Provided by CERN