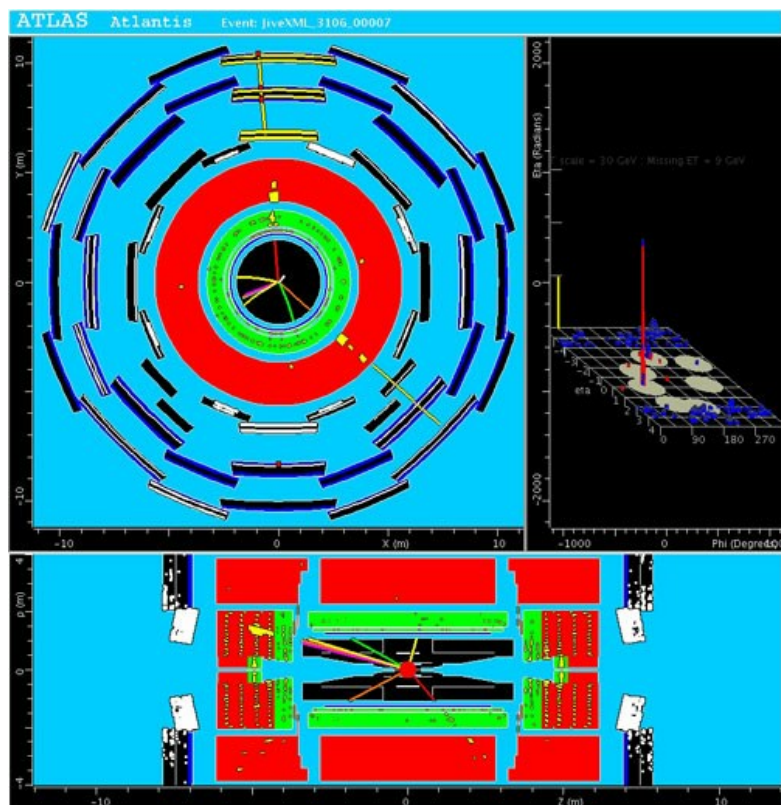


Atlantis

Inside a 27-kilometre-long circular tunnel at the border of France and Switzerland, 100 metres underground between Lake Geneva and the Jura mountains, the Large Hadron Collider allows physicists access to a whole new regime of energy. Protons are pushed to almost the speed of light and collide head-on, squeezing vast amounts of energy into a microscopic volume, in a condition similar to the fireball just after the big bang. A large experiment at the collision point is ATLAS, which searches for the Higgs boson – also known as the "God particle", as it is believed to be what endows other particles with mass. Hundreds of thousands of particles will spray out from each collision, a whole range of stable and unstable particles, in complex decay processes, and have to be tracked and identified. The detector produces a terabyte of raw data in every proton bunch collision.

The huge number and complexity of the traces of decay products through the detector calls for highly developed visual tools. Such a tool is the ATLANTIS event display, offering a large variety of intuitive, data-orientated 2D and 3D projections, which enable the user to quickly understand and visually investigate complete collision events. The screenshot picture shows projections through the cylindrically shaped ATLAS detector, where each layer is specifically developed and tuned for optimal measurement of decay particle properties. The bending of particle tracks within the magnetic fields are visible. Traces of the particles can be followed through the whole detector. The picture shows an example of such traces for the production and decay of a Higgs boson in one of its many predicted decay modes.

ATLANTIS is a collaboration of University College London, NIKHEF, University of Nijmegen, Columbia University, University of Birmingham and CERN.



Contact

Dr Juergen Thomas

Professor Peter Watkins, School of Physics and Astronomy

Email: p.m.watkins@bham.ac.uk (<mailto:p.m.watkins@bham.ac.uk>)

Tel: 0121 414 4625