

Research news: Dr Nikolopoulos grant award

Posted on Monday 25th March 2013

Congratulations to Dr Kostas Nikolopoulos for the Marie Curie Career Integration Grant from the European Commission amounting to 100k Euro for four years.

The title of the project is "**Study of the ElectroWeak Symmetry Breaking and the Higgs Sector with the ATLAS detector at the LHC**" and corresponds to (€100,000) £78,125 for four years and will support the Birmingham Fellow during his fellowship.

Following the observation of a Higgs-like boson by the ATLAS and CMS collaborations at the CERN Large Hadron Collider (LHC) in summer 2012, the Standard Model of particle physics is possibly completed.

With the current experimental precision, its production and decay patterns are compatible with those of the SM Higgs boson. However, to unambiguously characterize this newly observed particle, detailed studies of its properties (mass, production rates, spin/CP quantum numbers, self-couplings) are needed, while searches for other additional bosons are important.

The aim of this project is to perform these studies using the $H \rightarrow ZZ^{(*)} \rightarrow 4l$ final state. This final state, although it has low event rates, is ideal since it is fully reconstructed with high precision and offers the best signal-to-background ratio in the LHC.