

Dedicated Trigger for Highly Ionising Particles at ATLAS

In 2012, a new algorithm novel trigger was designed at ATLAS to detect signatures of Highly Ionising Particles (HIPs) such as magnetic monopoles with the ATLAS trigger system. With proton-proton collisions at a centre-of-mass energy of 8 TeV, those the algorithm trigger was designed to detect ionising signatures of HIPs were recorded using the Transition Radiation Tracker (TRT). With this new approach it is possible to probe The new trigger is capable of probing higher monopole masses and charges than before, as well as other HIP signatures such as QBalls and dyons.

We will give a description of the algorithm and its performance during the 2012 data-taking, as well as a comparison to the triggers used so far to detect HIPs in ATLAS. Furthermore an improved algorithm is presented which is expected to efficiently record the events of interest in the challenging environment of Run 2 due to the increased center-of-mass energy and pile-up conditions.

Author: KATRE, Akshay (Universite de Geneve (CH))

Presenter: KATRE, Akshay (Universite de Geneve (CH))