

ALPHA –Antihydrogen Laser PHysics Apparatus, silicon tracking detector for antihydrogen annihilation detection

The aim of the ALPHA experiment at CERN is to trap cold atomic antihydrogen and study its properties. The final goal is to test CPT-conservation by comparing atomic 1S-2S transition of hydrogen and antihydrogen with high precision laser spectroscopy.

As the trapped antihydrogen annihilates, either in the trap walls or with residual gas, pions are emitted. A silicon tracking device, consisting of 120 double sided 128x256 silicon strip detectors has been constructed at the University of Liverpool to surround the antihydrogen trap. The detector was installed to the ALPHA apparatus at May 2009. By reconstruction of the pion tracks, the antihydrogen gas is monitored and imaged during the experiment. Description, characteristics as well as the testing and assembly routines of this detector will be presented with a brief summary of the recent physics results.

Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):

http://ns.ph.liv.ac.uk/~pp/vienna/Vienna2010_pusa_summary.pdf

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