CERN/DRDC/90-28
DRDC/ S3
2 August 1990

Study of a Tracking/Preshower Detector for the LHC.

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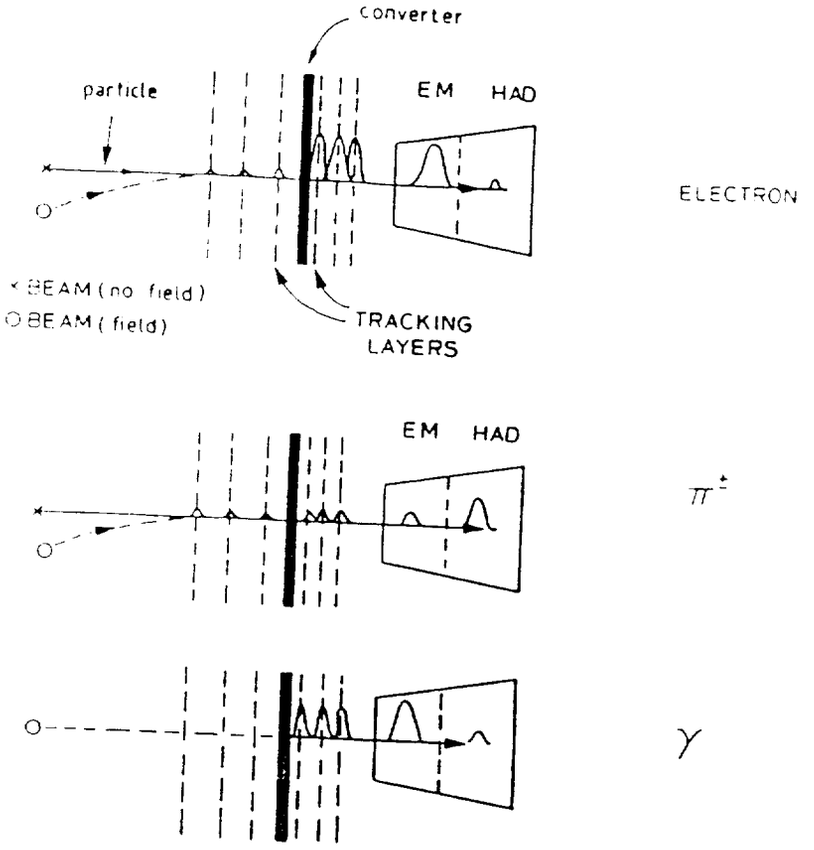
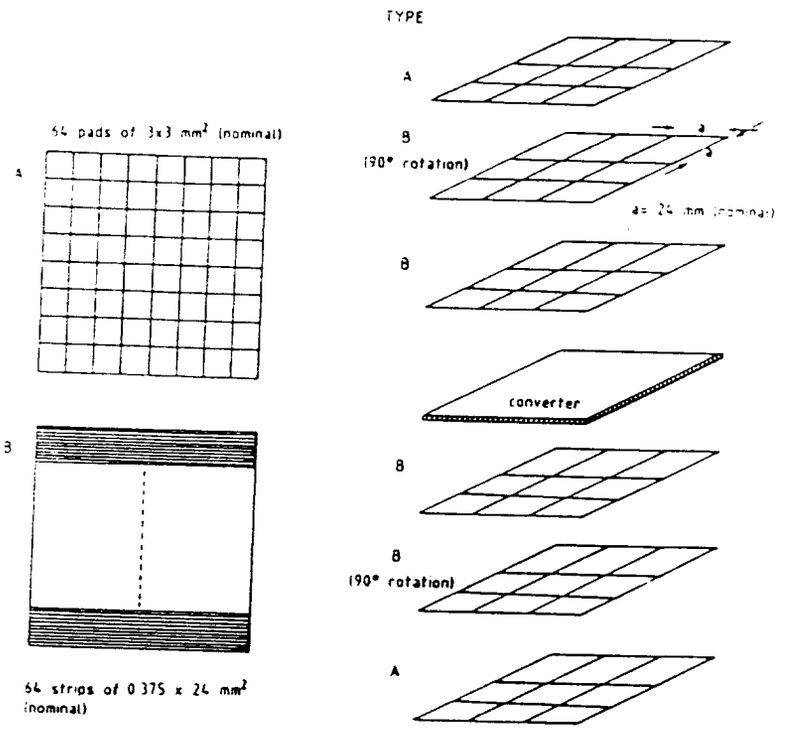
An important goal in the design of a detector to operate with high machine luminosity at the LHC is the detection of electrons at either the trigger or analysis level as a signature of rare physics processes. The purpose of this R and D activity is the study of track-stub/preshower techniques in electron identification. Activities include the study of radiation tolerance for (silicon) pad counters of the preshower detector, with the associated development of fast, low-noise, radiation hard and low-power electronics readout for the counters. The final aim is the construction of a prototype detector capable of operating at LHC.



The identification of electrons, photons and charged pions



Schematic prototype detector arrangement.