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I.T.

TRANSITION RADIATION DETECTORS AND PARTICLE
IDENTIFICATION

B. Dolgoshein

Opportunities and limitations of transition radiation detectors for particle identification (in the main, the discrimination between electrons and pions) in the $\gamma = 10^3 - 10^5$ region are discussed. Detectors of modern experiments and the possibilities of improving their characteristics are described. Possibility to measure the muon energy in the energy region ≤ 1 TeV is discussed.

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09.50

THE MICROSTRIP VERTEX DETECTOR FOR E687 EXPERIMENT
AT TEVATRON

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A vertex detector consisting of 12 microstrip planes has been realized for the photoproduction experiment E687 at Tevatron.

The aim of the microvertex is the reconstruction with high efficiency of the heavy flavour decay vertices. The readout electronics, associated with each strip consists of low noise preamplifier, amplifier and fast integrating ADC. It has been developed by INFN-Milano to fully exploit the possibilities of the detector.

A test of a part of the microvertex detector has been carried out in the real experimental conditions at Fermilab during summer 1985.

Detection efficiency, charge collection and charge sharing between adjacent strips, signal to noise ratio, spurious hits, cross-talk and correlations have been extensively investigated.

A simulation program, which makes use of a purposely developed pattern recognition and of the measured performances of the microvertex, gives for the experiment a total sensitivity of ~ 600 events/nb for Beauty and $\sim 2 \cdot 10^6$ for charm in ~ 2000 hours of data taking.