

THE TRANSITION RADIATION DETECTOR FOR THE PAMELA EXPERIMENT

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A Transition Radiation Detector (TRD) has been developed and tested for the PAMELA instrument. PAMELA is a satellite borne magnetic spectrometer designed to measure antiparticles (positrons and antiprotons), protons and nuclear components of cosmic rays and to the search of cosmic antinuclei. The TRD detector will be used together with an electromagnetic calorimeter for particle identification. The detector is composed of 9 layer of proportional straw tubes, interleaved with carbon fibers radiators. We will describe its performances as determined at particle beam tests with different particles and at different energies performed at the CERN-PS and at CERN-SPS. These results will be compared to the results of a Monte Carlo simulation code based on the GEANT 3.21 package.