

# Energy Loss Signals in the ALICE TRD

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We present the energy loss measurements with the ALICE TRD in the  $\beta\gamma$  range  $1-10\beta^4$ , where  $\beta=v/c$  and  $\gamma=1/\sqrt{1-\beta^2}$ . The measurements are conducted in three different scenarios: 1) with pions and electrons from testbeams; 2) with protons, pions and electrons in proton-proton collisions at center-of-mass energy 7 TeV; 3) with muons detected in ALICE cosmic runs. In the testbeam and cosmic ray measurements, ionization energy loss ( $dE/dx$ ) signal as well as ionization energy loss plus transition radiation ( $dE/dx+TR$ ) signal are measured. With cosmic muons the onset of TR is observed. Signals from TeV cosmic muons are consistent with those from GeV electrons in the other measurements. Numerical descriptions of the signal spectra and the  $\beta\gamma$ -dependence of the most probable signals are also presented.

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