Contribution ID: **249** Type: **Poster (Session A)**

New Results from the DREAM project

Dual-Readout calorimetry is a promising new technique for high-precision measurements of hadronic showers and jets. The DREAM Collaboration is exploring the limits of the possibilities offered by this technique, by systematically eliminating the limiting factors, one after the other. Powerful tools in this context are the simultaneous measurement of the scintillation light and the Cherenkov light generated in the shower development, and a detailed measurement of the time structure of the signals.
In this talk, the latest results of this generic detector R&D project will be presented.

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

Dual readout technique exploit the fact that the Cherenkov light is only produced by the electromagnetic shower component, the relative contribution of this component to the signals can be measured on the event by event basis, resulting in reduction of fluctuations. This leads to an important improvement in the hadronic calorimeter performance. The dual-readout technique was first developed in fiber calorimeters. Further improvement on both the electromagnetic and hadronic resolution can be achieved by using homogeneous, dense crystals. This reduces both the sampling fluctuations and the quantum fluctuations. Promising results have been obtained by using BGO crystals and PbW04 crystals doped with small amounts of Molybdenum.

Author: GAUDIO, Gabriella (INFN, Sezione di Pavia-Universita & INFN,)

Presenter: GAUDIO, Gabriella (INFN, Sezione di Pavia-Universita & INFN,)