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Study of granular electromagnetic calorimeter with PPDs and the scintillator strips for ILC

The ScECAL group of the CALICE collaboration is developing granular electromagnetic calorimeter with the Pixelated Photon Detectors (PPDs) and scintillator strips for ILC detector.
The prototype module of such ECAL has been constructed.
It is a sampling calorimeter made of 3 mm thick plastic scintillator as the sensitive layers and of 3.5 mm thick tungsten-cobalt as the absorber. In order to achieve the 1 cm x 1 cm lateral segmentation. The scintillator strips are 1 cm x 4.5 cm strip scintillator, and these in odd layers are orthgonal with respect to those in the even strips.
The scintillation photons are collected by a wavelength shifting (WLS) inserted along the longitudinal direction of center of each strip scintillator and are readout with a PPD.
The size of the module is 18 cm x 18 cm x 30 layer and the total numbers of readout channels is 2160 channels.
This module was tested with 1 - 32 GeV electron beam at Fermilab in Sep. 2008 and in May 2009.
As the preliminary results of the first stage analysis, we obtained the ScECAL energy resolution
a \sigma_E /E = (1.44\pm0.02) \oplus (15.15\pm0.03) /\sqrt{E_Ybeam (GeV)}
for the electron beam. More detail will discuss in my pleasentatiion.

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

http://azusa.shinshu-u.ac.jp/~coterra/pub/coterra.pdf

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