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“Development of ASICs for forward calorimetry in future linear collider”

Abstract:

Severe operating conditions of forward calorimeters in future linear collider (ILC/CLIC) impose demanding requirements on detector readout, in terms of high occupancy, large input dynamic range or limited power dissipation.

One of the main forward calorimeters, the Luminosity Detector (LumiCal) in ILC/CLIC will be built as silicon tungsten sandwich calorimeter, with about 200 000 readout channels.

This talk will cover the development of the LumiCal front-end ASICs. In particular, the choice of readout architecture will be discussed, the developed ASICs will be described, the results of lab and test beam measurements will be shown, the power pulsing aspects will be also discussed.

A short general introduction to front-end electronics will be given at the beginning of presentation.