

CALICE SiW ECAL - Beam test performance of a technical prototype of a highly granular silicon tungsten calorimeter

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A highly granular silicon-tungsten electromagnetic calorimeter (SiW-ECAL) is the reference design of the ECAL for International Large Detector (ILD) concept, one of the two detector concepts for the detector(s) at the future International Linear Collider. Prototypes for this type of detector are developed within the CALICE Collaboration. The technological prototype addresses technical challenges such as integrated front-end electronics or compact layer and readout design.

During Autumn/Winter 2019/20 a stack of up to 22 layers with a dimension of $\sim 18 \times 18 \times 25 \text{ cm}^3$ was compiled. A beam test at DESY is planned for May 2021. We will present preliminary results on the linearity w.r.t. to electromagnetic showers and the energy resolution as well as on shower shapes. An outline on the next steps will be given. One aspect that has to be addressed in the future is the proper technical implementation of power pulsing with local, i.e. next to the ASICs, power storage.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

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