

CALICE SiW ECAL - Development and performance of a highly compact digital readout system

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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. Since 2019 a highly compact digital read out card, called SL-Board, is available. The SL-Board combines data acquisition, power regulation and signal buffering for up to 10000 readout channels on a surface as small as $18 \times 4 \text{ cm}^2$. The card complies with space constraints in ILD. The SL-Board can be readout with an USB interface or through a dedicated module, called CORE Module.

The system has been used for the first time in a beam test in Summer 2019 at DESY for the readout of 4 layers. In the next beam test in March 2020 we will readout 15 layers with the new system.

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