

Optimisation of the BeamCal design

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The BeamCal, an electromagnetic calorimeter at very small polar angle, is aimed to detect single high energy electrons on top of the widely spread background from beamstrahlung. This feature is important, since processes with high energy electrons at small polar angles are a severe background for many new particle searches.

The performance of BeamCal for two different sensor segmentations is compared for beam parameters proposed for the ILC at 1 TeV. The number of readout channels is kept constant. One of the segmentations shows clearly a superior performance.

In addition, the range of signal charges is estimated for both segmentations.

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