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Total Measurement Calorimetry

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Hadron energy measurement has intrinsic fluctuation due to neutral pion production in the hadron shower. Here we introduce active absorber in the hadronic calorimeter of sandwich type. The active absorber is achieved by using lead glass or similar heavy and transparent materials to have a possibility of detecting the cherenkov lights which indicate the EM shower.

The combination of two active materials will give us information on the neutral pion productions in hadron interaction. Identification of the neutral pion production is expected to have the energy resolution superior than that of the usual calorimeter.

This is applicable to the collimated jet events without separation of the particles, like PFA method. This leads to more importance at the higher energy jets for the future experiments.

The total measurement idea is different from the dual read out scheme, because of the totally active absorber scheme will give less fluctuations than the DREAM.

The current activities to use the lead glass and PbF₂ as the active absorber will be discussed and further simulation study to find the neutral pions is covered as well.

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