

Design of the CMS-CASTOR sub detector readout system by reusing existing designs

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The CMS CASTOR detector is a small calorimeter located at 14.3 meters from the interaction point behind the HF detector. The CASTOR project was only approved mid of 2007. Cherenkov radiation in a sampling structure is used to measure the energy as the HF does. Logically one would use the same readout hardware as used for HF. But also other architectures were considered. Given the limited resources and time, developments from scratch were excluded. This talk presents an overview of the implementation of the readout chain as well as the considerations for the different choices. The HF front end system was finally chosen. It sends all the digitized samples via optical links to the counting room for further processing. The HF architecture of the data selection and processing didn't fit so well our requirements due to different segmentation and costs. A development by the TOTEM collaboration and by the CMS pre-shower was more close to our needs in respect to flexibility, availability and material cost. This architecture needed only a small hardware adaptation as well an adaptation of the requirements. The full CASTOR detector will be installed in June 2009 and we expect that in September we can present the results of the commissioning of the detector.

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