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Expression of Interest Toward MCMOS Time of Flight Tracking Layers for a detector at FCC-ee

We express interest to prepare a Time of Flight system to enhance the physics reach of the FCC-ee detectors. The physics motivations are well established and we mostly present here technical options considered and their possible implementations as ToF layers in the overall foreseen detector concepts. The performance target is to achieve a 30 ps MIP ToF precision with Monolithic CMOS sensor implementing at the same time the position precision required to be part of a tracking systems. Such layers could also be considered in a high granularity Si/W pre-shower calorimeter both to enhance the calorimetry performance and the PID. The sensor R&D interests are outlined for two main technologies, with the prospect to simulate the performance of system configurations and to design the layer mechanical structures and services in a tracking configuration.

Authors: CONTARDO, Didier Claude (Centre National de la Recherche Scientifique (FR)); GUILLOUX, Fabrice (Université Paris-Saclay (FR)); BOUDOUL, Gaelle (Centre National de la Recherche Scientifique (FR)); MEYER, Jean-Pierre (IRFU-CEA - Centre d'Etudes de Saclay (CEA)); Prof. SCHWEMLING, Philippe (Université Paris-Saclay (FR)); ALEKSAN, Roy (Université Paris-Saclay (FR)); DEGERLI, Yavuz (CEA Saclay)