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Fast timing detectors

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In this contribution, I will review the growing interest in implementing large area fast timing detectors with a time resolution of 30-50 ps based on low gain avalanche detectors. This interest is spurred as timing information is a very effective tool in pile-up rejection. Large scale high-precision timing detectors face formidable challenges in almost every aspect: sensors performance, their segmentation and radiation resistance, very low power and low noise electronics, cooling, low material budget and large data volume. In my talk I will report on the current status of this new development in detectors for high-energy physics, and its possible use at HL-LHC.

Primary authors: SADROZINSKI, Hartmut (SCIPP, UC santa Cruz); ARCIDIACONO, Roberta (Universita e INFN Torino (IT)); SEIDEN, Abraham (University of California,Santa Cruz (US)); STAIANO, Amedeo (Universita e INFN Torino (IT)); FERRERO, Marco (Universita e INFN Torino (IT)); CARTIGLIA, Nicolo (INFN Torino (IT)); SOLA, Valentina (Universita e INFN Torino (IT)); MANDURRINO, Marco (INFN)

Presenter: CARTIGLIA, Nicolo (INFN Torino (IT))

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