

## **Development of semiconductor solid-state detectors with sub-100ps time resolution.**

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Large area silicon pixel detectors have been traditionally used in high-energy physics experiments for particle tracking, with a time resolution typically ranging from few to some tens of ns.

Presently, the silicon pixel community is targeting sub-ns time measurements.

A first direction is the development of Low-Gain Avalanche diodes, with a time resolution down to 30ps for large pixels. Another research, which is the one that we do within TT-PET collaboration, is the development of the first monolithic pixel detector with 100ps time resolution for m.i.p.s in a commercial SiGe Bi-CMOS process.

The status and future perspectives of the development of fast silicon detectors will be presented.

**Primary authors:** PAOLOZZI, Lorenzo (Universite de Geneve (CH)); IACOBUCCI, Giuseppe (Universite de Geneve (CH)); CARDARELLI, Roberto (INFN e Universita Roma Tor Vergata (IT)); RIPICCINI, Emanuele (UNIGE); VALERIO, Pierpaolo (CERN); HAYAKAWA, Daiki (Universite de Geneve (CH))

**Presenter:** PAOLOZZI, Lorenzo (Universite de Geneve (CH))

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