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## [340] MONOLITH - picosecond time stamping capabilities in fully-monolithic highly-granular silicon pixel detectors

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The MONOLITH ERC Advanced project aims at producing a monolithic silicon pixel ASIC with 50µm pixel pitch and picosecond-level time stamping. The two main ingredients of the project are fast and low-noise SiGe BiCMOS electronics and a novel sensor concept, the Picosecond Avalanche Detector (PicoAD). Testbeam measurements of the proof-of-concept PicoAD prototype show full efficiency and time resolutions of 13ps at the center of the pixel and 25ps at the pixel edge, for an average of 17ps over the pixel surface. A second monolithic prototype with improved electronics, produced on a 350Ωcm substrate without an internal gain layer, provides 20ps time resolution.

**Theoretical Work** 

Author: Mr MILANESIO, Matteo (Universite de Geneve (CH))

**Co-authors:** PICARDI, Antonio (Universite de Geneve (CH)); IACOBUCCI, Giuseppe (Universite de Geneve (CH)); PAOLOZZI, Lorenzo (CERN); Mr CARDELLA, Roberto (Universite de Geneve (CH)); ZAMBITO, Stefano (University of Geneva); KUGATHASAN, Thanushan (CERN); Mr MORETTI, Théo (Universite de Geneve (CH))

Presenter: Mr MILANESIO, Matteo (Universite de Geneve (CH))

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