



Contribution ID: 70

Type: Talk

## **[308] MONOLITH - picosecond capability in a high granularity monolithic silicon pixel detector**

*Tuesday 10 September 2024 15:45 (15 minutes)*

The MONOLITH H2020 ERC Advanced project aims at producing a high-granularity monolithic silicon pixel detector with picosecond-level time stamping. To obtain such extreme timing the project exploits: i) a fast and low-noise SiGe BiCMOS electronics; ii) a novel sensor concept, the Picosecond Avalanche Detector (PicoAD), that uses a patented multi-PN junction to engineer the electric field and produce a continuous gain layer deep in the sensor volume. The proof-of-concept monolithic PicoAD demonstrator provided full efficiency and 13 ps at the center of the pixel. A batch of PicoAD prototypes with different geometries and gain-layer implant doses was delivered in January 2024; testbeam results will be shown.

**Primary authors:** IACOBUCCI, Giuseppe (Universite de Geneve (CH)); PAOLOZZI, Lorenzo (Universite de Geneve (CH)); Mr MILANESIO, Matteo (Universite de Geneve (CH))

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

**Session Classification:** Nuclear, Particle- & Astrophysics (TASK)

**Track Classification:** Nuclear, Particle- and Astrophysics (TASK)