



UNIVERSITÉ
DE GENÈVE

FACULTÉ DES SCIENCES
Département de physique
nucléaire et corpusculaire



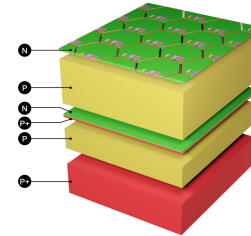
MONOLITH - Picosecond Time Stamping Capabilities In Fully Monolithic Highly Granular Silicon Pixel Detectors



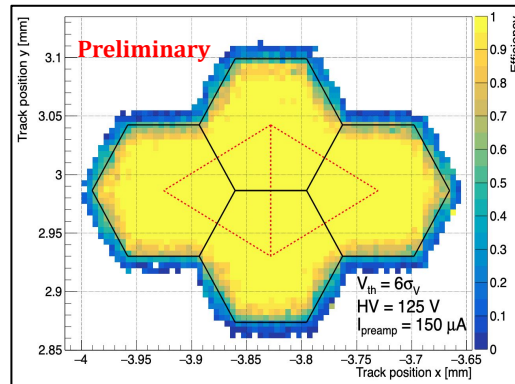
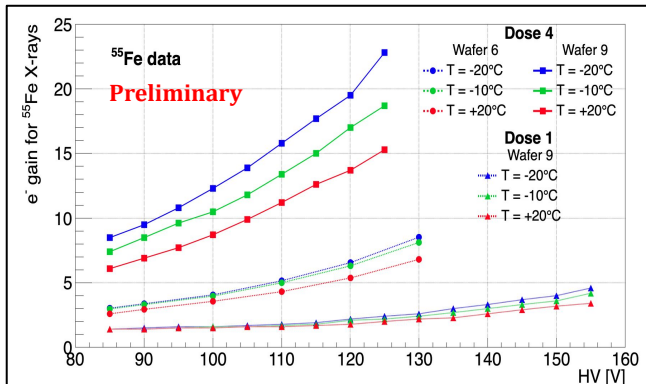
Matteo Milanesio on behalf of the MONOLITH team

Aim at producing a monolithic silicon pixel ASIC with **picosecond-level time stamping**:

- fast and low-noise SiGe BiCMOS electronics
- novel sensor concept, the **Picosecond Avalanche Detector (PicoAD)**



Proof-of-concept of PicoAD sensor (not yet optimized for timing) and HBT frontend:
gain for ^{55}Fe X-rays of up to 23 efficiency > 99.5 %



time resolution $\sigma_t = (20.1 \pm 0.3)$ ps

