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

![Graph of Fe data](image1)

![Graph of PicoAD sensor proof-of-concept](image2)

![Graph of preliminary results](image3)