



Contribution ID: 49

Type: **Invited Talk**

New ASICs for medical imaging with embedded machine learning capability

Thursday, 6 March 2025 17:25 (25 minutes)

Recent generations of ASICs developed at Polimi for medical imaging applications will be presented. ASICs for SiPMs readout of monolithic scintillators allow spectroscopy and position of interaction measurements of gamma-rays, also within a large dynamic range thanks to an active gain control mechanism in the analog channel. Such ASICs are applied, in particular, in prompt-gamma measurements for dose verification in particle therapy. The new ANNA ASIC implements an integrated neural network which processes directly the analog signals from the detectors, towards an on-chip reconstruction of the gamma-ray position of interaction in the scintillator.

Primary author: FIORINI, Carlo Ettore Nicola (Istituto Nazionale di Fisica Nucleare)

Presenter: FIORINI, Carlo Ettore Nicola (Istituto Nazionale di Fisica Nucleare)

Session Classification: Solutions for fast timing and high frequency