

8th Beam Telescopes and Test Beams Workshop



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Gamma-ray calorimetry in Nuclear Physics experiments

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Sometimes we forget about the importance of knowing well some basic principles in Physics, like the gamma-ray interaction and detection. And gamma-ray detection is a key factor in Nuclear Physics experiments, since most of the nuclear excited states produced in a nuclear reaction decay fast with gamma emission, and emitted photons can have energies from a few keV up to tens to MeV. Thus, it is needed an analysis that goes from a simple or single gamma-ray energy release measurement to a complex calibration, add-back and pattern recognition and event reconstruction. This presentation gives an overview of gamma-ray detection principles, detectors requirements and analysis methods. The R3B experiment at FAIR illustrates how a test beam plays a crucial role for the development and validation of gamma-ray calorimetry in a big setup.

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