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New gamma-ray detector CATANA for in-beam gamma-ray spectroscopy with fast RI beams

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The γ -ray detector CATANA (Caesium iodide Array for γ -ray Transitions in Atomic Nuclei at high isospin Asymmetry) is designed to detect inflight γ -rays from fast RI beams of RIBF at RIKEN Nishina Center. CATANA consists of 200 square frustum-shaped CsI(Na) crystals coupled with the photomultiplier tubes. Total active weight of the scintillator material is 270 kg. The scintillator positions are arranged to minimize the distance between the scintillators so as to have better calorimetric property.

The 50% of total detectors has been constructed and commissioned in 2016. We have performed several experiments by combining CATANA and the SAMURAI spectrometer [1]. The talk will give an overview of CATANA and results from experiments.

[1] T. Kobayashi et al., Nucl. Instr. Meth. B 317, 294 (2013).

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