Request to perform a beamtime test in parasitic mode

- Previous beamtime at Cosy : Detector Setup
- Detector setup for In-Beam Measurements

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on behalf of the PANDA hypernuclei Group

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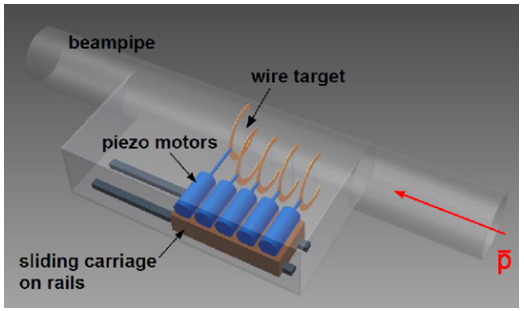
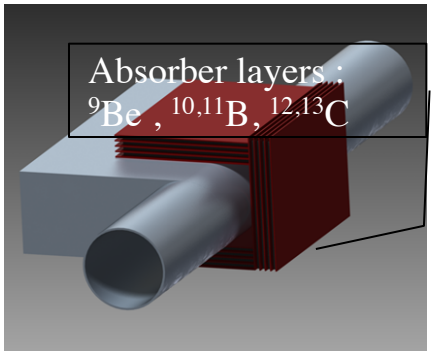
Hypernuclear Detector Setup

- Integration in the PANDA spectrometer
  - Space constraints
  - High magnetic field
  - Large hadronic background

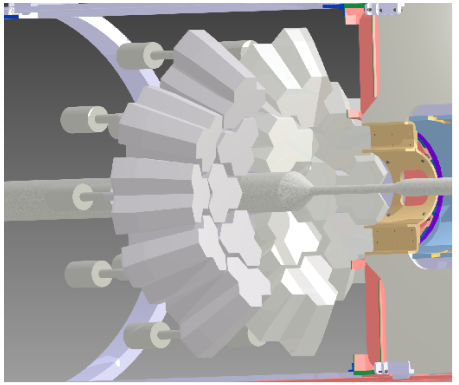


- Physics Performance

  - **The primary target** :
    production of slow momentum Ξ^-



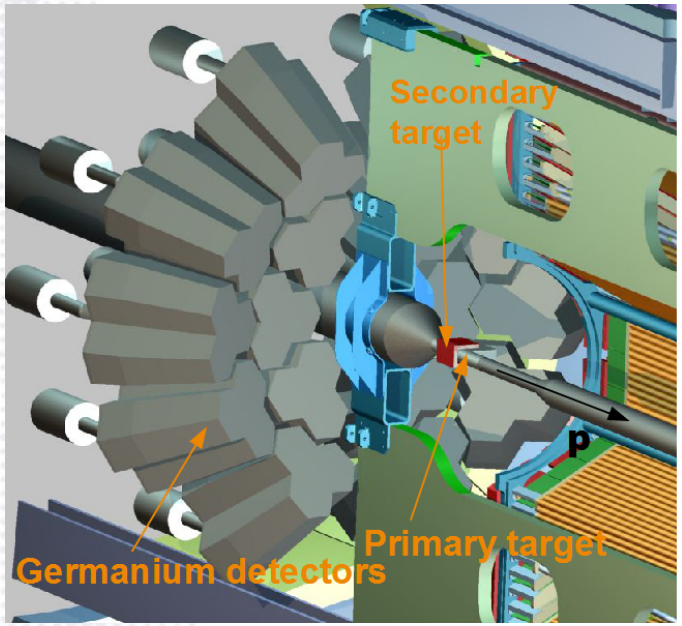
  - **The Secondary Active target** :
    Stopping of Ξ^- , and detection of
    charged decay products (monoenergetic π^-)

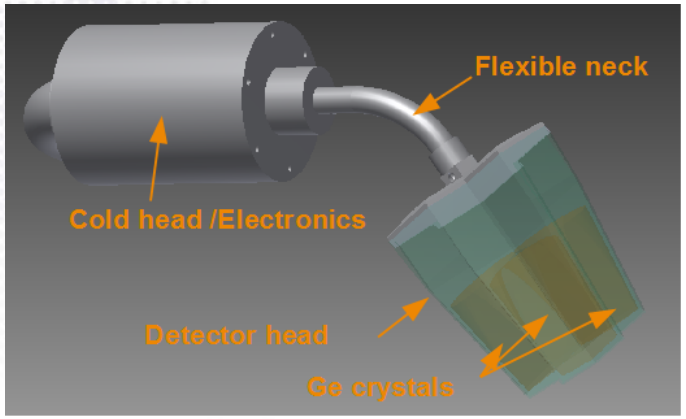


  - **The HPGe Array** : high precision γ detection

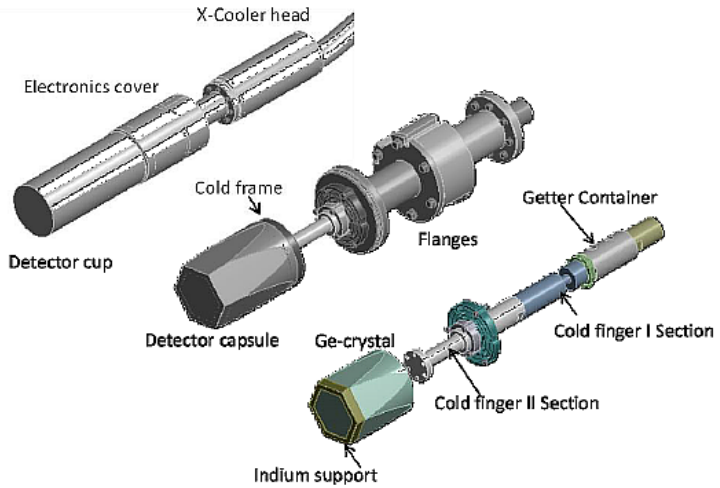
High Precision γ- Detection

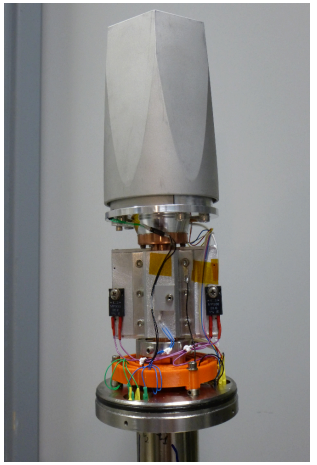
γ- Spectroscopy by using an "existing " array of HPGe





Prototype based on a single-encapsulated-crystal

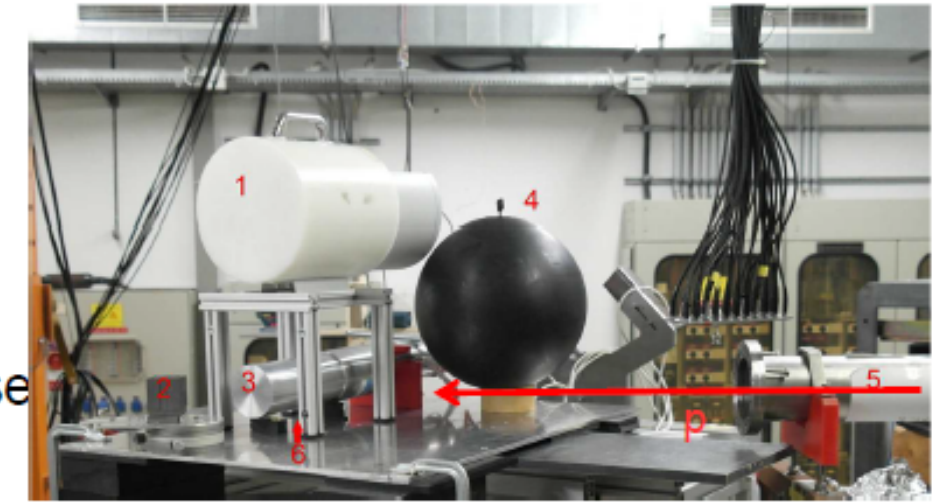




γ- Detection: Beam time at COSY 2014

- Beam time in june and july 2014
- Jessica area
- Beam: $8*10^8$ p, 6 s beam,
- 17 s cycle, 2.78 GeV/c
- 5 cm carbon target
- Measurements in 11s spill pause
- Detector @ 120°, 15 cm distance
- Additional neutron detectors

Cortesy of M. Steinen and T. Rathmann



1 act. n detector	4 pas. n detector
2 target	5 beam pipe
3 Germanium	6 ^{60}Co source

No In-Beam Measurements : active resetting preamplifier needed

Parasitic Beamtime Request at COSY 2015

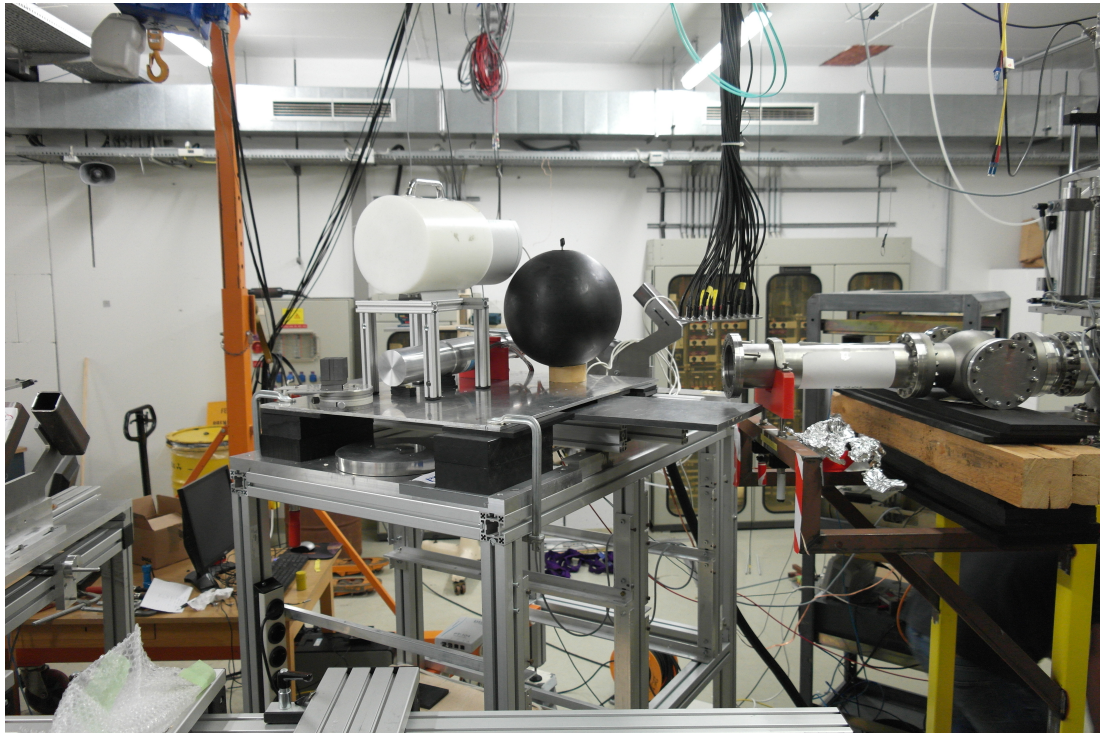
In-Beam Measurements to prove full operational capability of prototype

- Detector fully equipped

Setup Requirements :

- Space : 1m x 1m) or even less ~ 60cm x 60 cm
- No maximum proton beam intensity (~10^7 p/s)
- Diameter of beam spot not relevant
- Running time : ~ few days

Cortesy of M. Steinen and T. Rathmann



Thank you