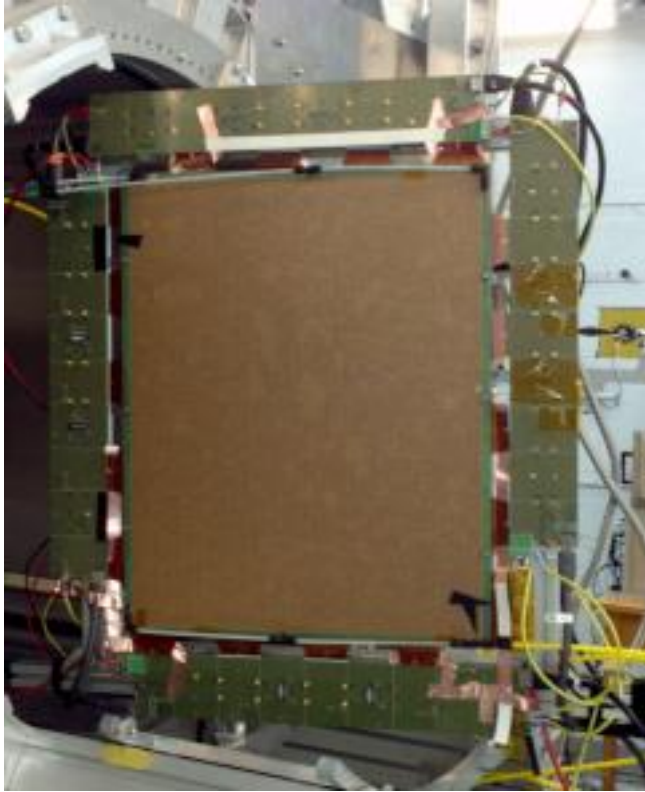


# SBS/Front Tracker



First «pre-final» GEM module + Electronics

Up to 6 chambers 150x40 cm<sup>2</sup>; each chamber has 3 40x50 cm<sup>2</sup> modules, based on the GEM technology. The tracker will be used in different configurations in SBS and BigBite.

Funded by INFN for ~1 MUSD (R&D + Production).

Latest activities:

- GEM foil quality check redefined after negative results on the first 4 foils: new procedure defined with the help of CERN+UVA experts: first step consists in an aggressive cleaning based on quick HV ramp up.
- DESY Beam Test: two modules tested in magnetic field up to 500 Gauss with few GeV electron beam. Analysis in progress
- Electronics Advances: final MPD version including advices of JLab DAQ experts; new front-end card with Panasonic connector.
- GEM foil improvement: protective resistor pads outside the inner frame, for easier access; added pads for capacitor coupling to readout plane
- Electronic Noise: noise at the level of 10 ADC units when strips are connected to the card inputs.

Requirements:

- Hit spatial resolution <math><100 \mu\text{m}</math>
- Stand large background flux
  - $\leq 250 \text{ MHz/cm}^2 \gamma$
  - $\leq 160\text{k/cm}^2$  charged particles
- Active area  $\geq 120 \times 40 \text{ cm}^2$
- Acquisition rate  $\sim 20 \text{ kevt/s}$

Status of construction:

- 3 <pre-final> modules assembled;
- expected construction of 1 module/month
- 3 complete chambers by the end of 2014
- rest of the chambers by the end of 2015

