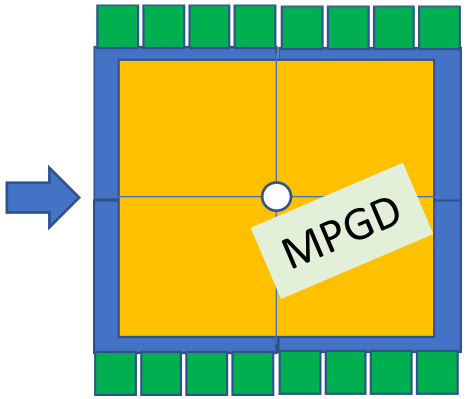
Development of a Micromegas prototype for the AMBER experiment at CERN

M. Alexeev on behalf of working group

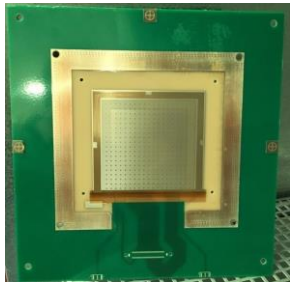
Apparatus for Meson and Baryon Experimental Research

We are designing a Micromegas (MM) prototype that would fulfil the future requirements of the AMBER (NA66) experiment and would eventually substitute some of the ageing detectors

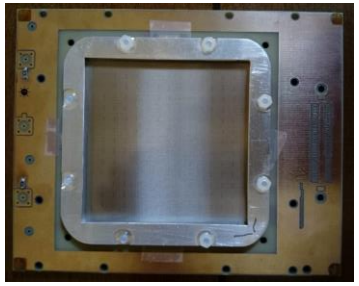


- Active area – up to 180x150 mm^2
- Rates - ~150kHz/mm^2 (centre), 1-2 kHz/mm^2 (periphery)
- Thickness – 0.3-0.5%/plane
- Possibly, proven design

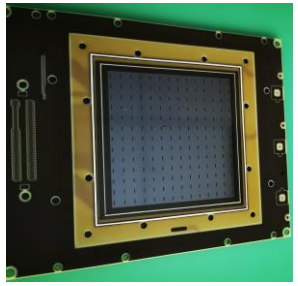
A series of prototypes with different manufacturing and geometrical properties are studied both in laboratory and at Beam



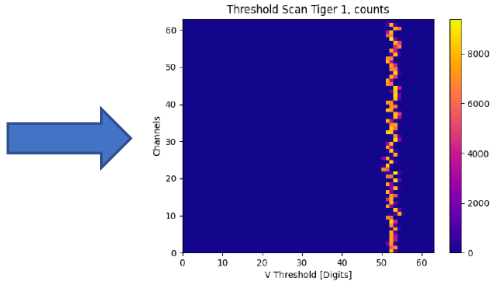
Bulk



Floating Mesh

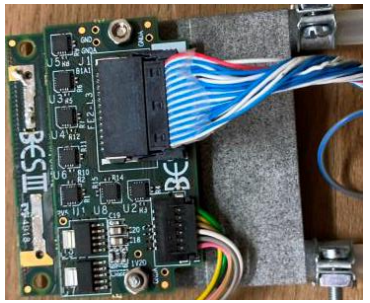


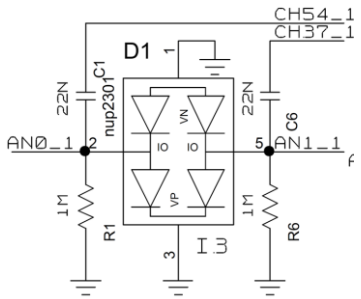
Resistive



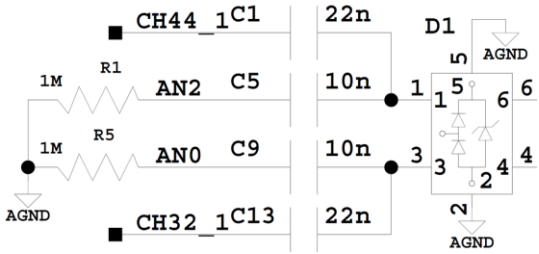
For the readout we are qualifying the option of using a TIGER ASIC based FE together with a study for a dedicated ASIC requirements

Initial FEs identical to the BESIII FEB





New FE cards with a new protection circuit & form factor



A dedicated ASIC is expected to be submitted within 2022