



GEM-TPC Meeting

Bernhard Ketzer

Technische Universität München

09 March 2009

GSI





Agenda

1. Communications (B. Ketzer, TUM)
2. Status of small TPC and FE electronics (M. Vandenbroucke, TUM)
3. Status of TPC prototype (B. Voss, GSI)
4. Detector for testing GEM and readout PCB (S. Doerheim, TUM)
5. Integration of TPC in FOPI DAQ (F. Cusanno, TUM)



GEM-TPC Projects

- **Simulations**
 - Pattern Recognition, Reconstruction, Resolution
 - Space charge distortion & correction
 - Event deconvolution
- **Small 10×10 cm² GEM-TPC, 77 mm drift length**
 - Cosmics (PASA/ALTRO)
 - ELSA (AFTER T2K)
 - Cosmics (new AFTER T2K)
 - ELSA (new AFTER T2K)
- **GEM-TPC Prototype: ø30 cm, 750 mm drift length**
 - Assembly ongoing (GSI, TUM, Bonn, SMI)
 - T2K FE electronics ordered (10 k channels)
 - Test in FOPI in August/September 2010
 - Slow control (Bonn, SMI)





Prototype Plans

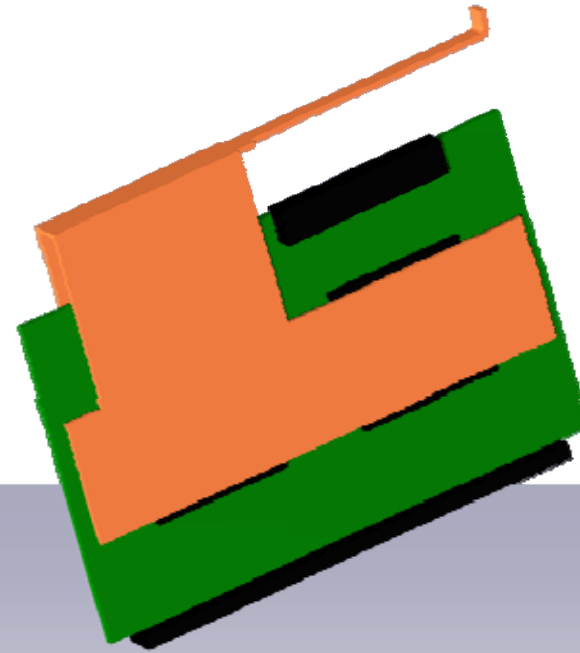
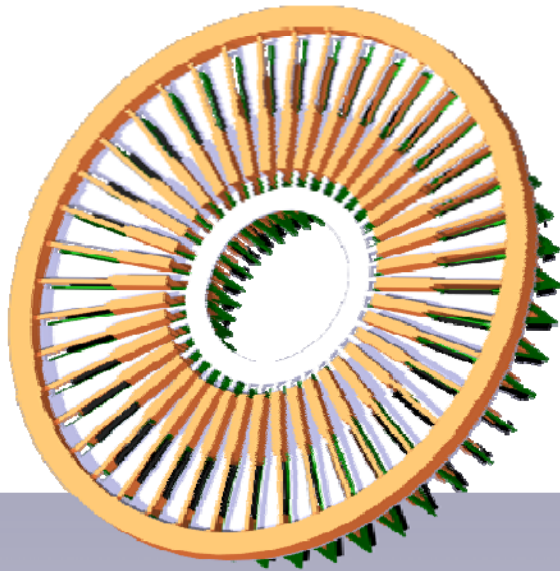
- **Field cage: Rohacell + Kapton strip foil**
 - samples of sandwich structure glued, tempering to be optimized
 - ~ 2 months delay with production of strip foil
 - first samples to be received next week
 - large foil: patching necessary, tools being prepared
 - tools for gluing cylindrical shape ready
 - goal: ready middle of June, on critical path!

- **GEM detector & pad plane**
 - foils & pad plane ready, test detector working
 - assembly of prototype detector to be finished by end of March
 - testing and commissioning of detector in April at TUM

Prototype Plans

- **Cooling**

- advanced system with cooling liquid circulating in two rings
⇒ still R&D necessary (GSI / Bonn)
- alternative solution for first prototype:
cooling of cards via Cu plate, cooling liquid only at the end plate





Prototype Plans

- Commissioning & testing
 - Cosmics, ELSA
 - Test in FOPI in August / September
 - Supply lines installed
 - Slow Control in progress
 - Integration of TPC DAQ in FOPI DAQ