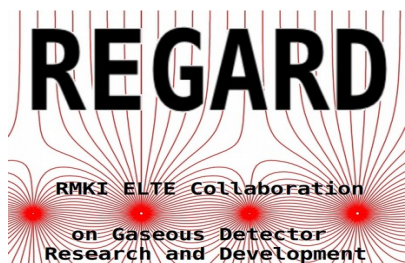


# GEM-based TPC system beam testing plans

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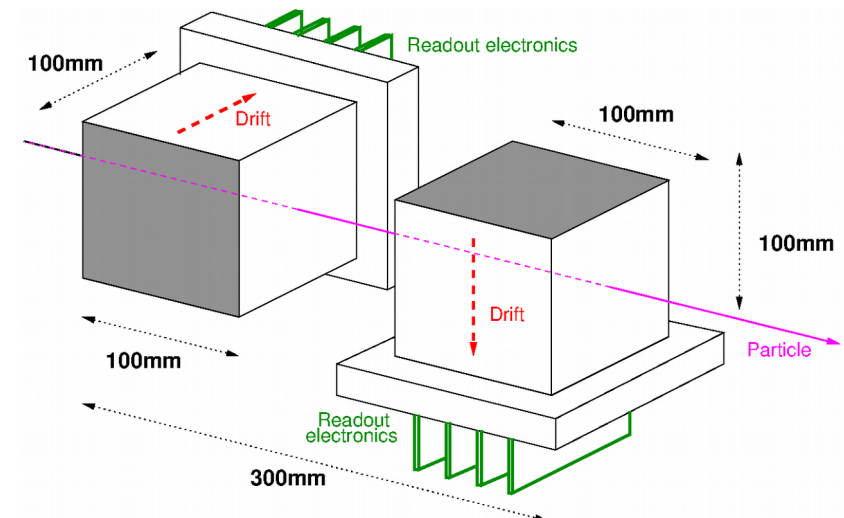
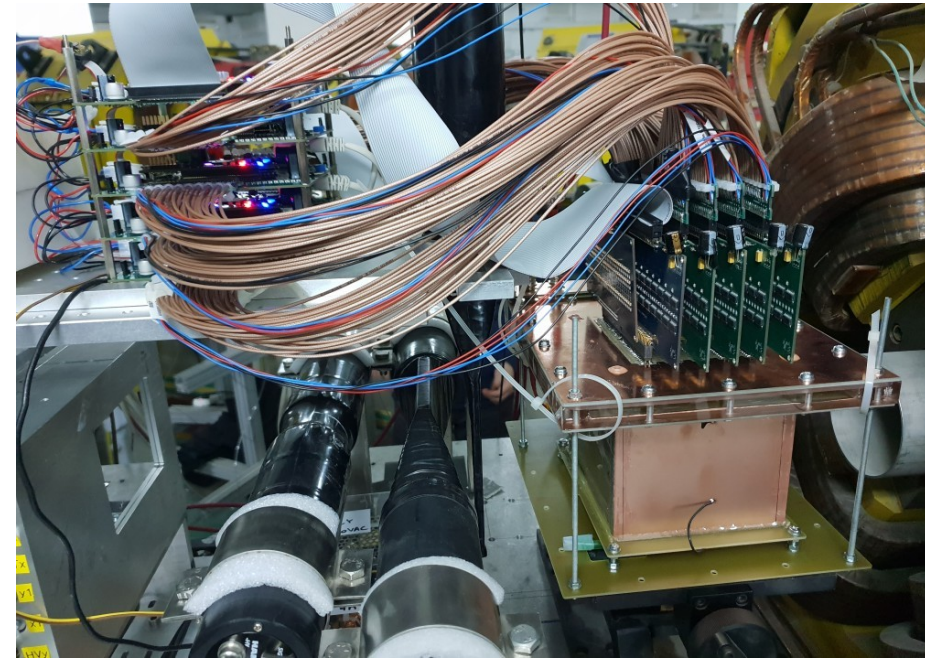


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- Single and double (twin) configuration basic testing with beam
- Perpendicular setting: drift velocity online calibration PoC, practical setting
- Intensity dependence studies: tracking efficiency, gain drop, electronics limitation, two-track resolution quantification, space charge distortion, pattern recognition efficiency testing...
- **Unclear if summer or autumn period is more manageable!**

# Beam requirements

- We can run in **parasitic** mode, downstream of any other setup (which does not destroy the beam)!
- Intensity variation: can be done with collimators, or using secondary target: preferable if we are the most downstream
- 3-4 days low intensity running (10-100kHz)
- 3-4 days high or varied intensity running (not more than 1MHz)



# Auxiliary requirements



- Gas supply: preferable with two **Ar+CO<sub>2</sub>** mixtures (80:20 and 90:10 ?) no other gases needed (will do this R&D in the lab). Sufficient only one gas supply. Flow needed 2-10 l/h
- All power supplies, as well as readout (DAQ and a single PC in the counting house, connected with Ethernet) can be provided by ourselves
- Beam trigger either common or scintillator by us