



# Status Forward Endcap EMC

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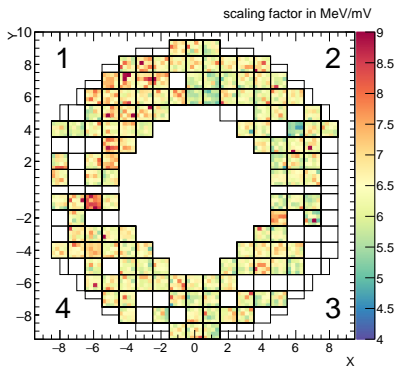
# Submodule Manufacturing

- Finished submodule manufacturing in August (4 years)
- All 268 submodules built! (3856 crystals)
- Thanks to all contributors (amongst others technicians (Bochum, Stockholm), students)



## Submodule Precalibration

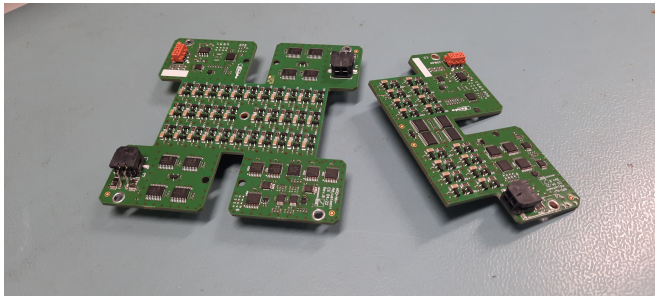
- 133 APD submodules cosmics tested so far (Bonn test station) (plus all VPTT submodules)
- 46 APD submodules finally glued (inserts to alveole) (plus all VPTT submodules)



- Nominal HV settings (M = 200, -25 °C)
- 12000 MeV / 2000 mV = 6 MeV / mV
- Residual spread correction by HV fine adjustment (per APD)
- Global shift by HV supply (8 APDs)

# HV Boards

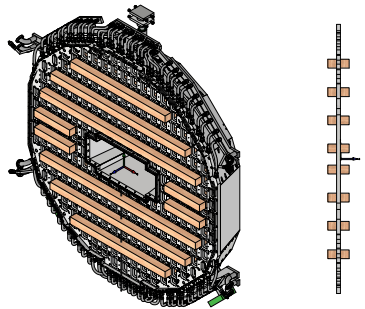
- 8- and 16-unit HV regulator boards
  - ▶ Pre-series successfully tested
  - ▶ Start of production (Bonn)
- 17 V adjustment range, 256 steps
  - ▶ 66 mV (0.5 % gain variation at  $M = 200$ ) per step
- 7 V adjustment range used up by worst spreading submodule (usually about 3 V)





# Move to Jülich

- Preparation of transport suspension for backplate
- Backplate to be removed (reinstalled) in upright position
- Transport in horizontal position
  - Standard size (height limit) 7.5 t truck
- Old KVI delivery casing not usable
  - Cooling pipes connected to backplane



# Move to Jülich

- Jülich TOF area gate:
  - ▶ Lifting of backplate back to mounting orientation
  - ▶ Craning of backplate (and frame, chillers etc.) over concrete wall
- Installation of Forward Endcap frame to mounting frame
- Installation of backplate to Forward Endcap frame
- Installation of submodules to backplane
- Forward Endcap EMC beamtimes at COSY expected in 2023 and 2024

