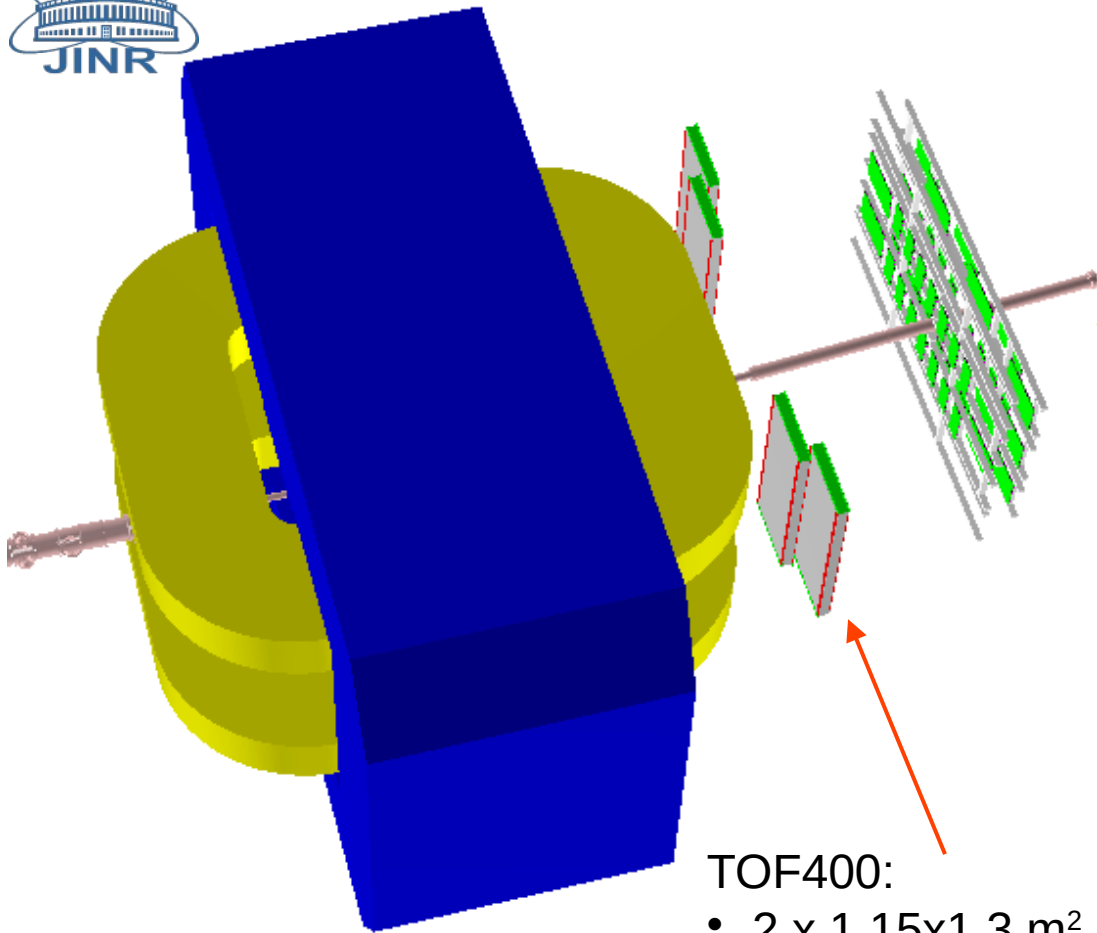




Status of the ToF system of the BM@N setup

M.M. Romyantsev on behalf of TOF group.

ToF System in recently run

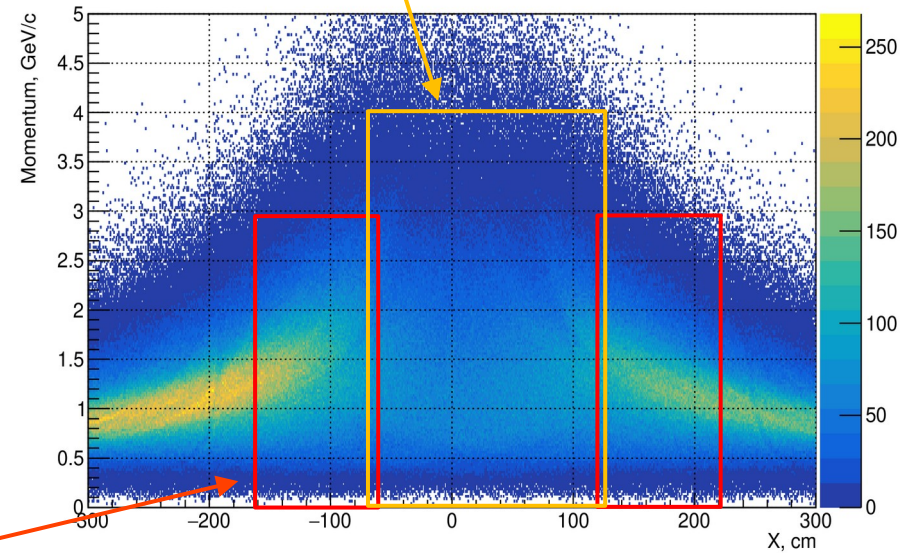


TOF700:

- $3.2 \times 2.2 \text{ m}^2$
- 60 detectors of different size
- 3520 channels of FEE

TOF400:

- $2 \times 1.15 \times 1.3 \text{ m}^2$
- 20 detectors
- 1920 channels of FEE

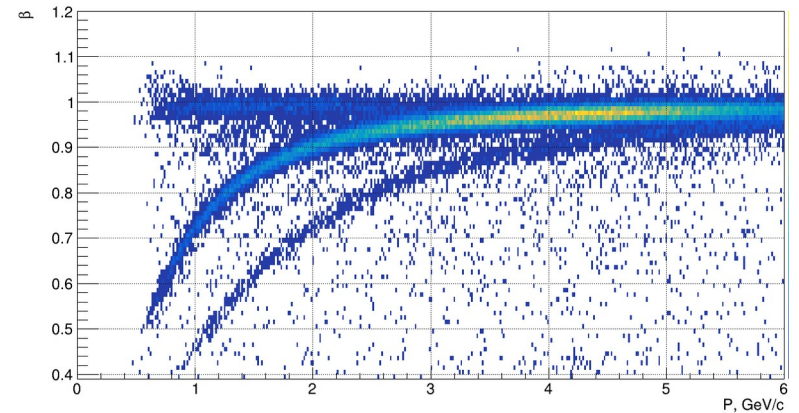
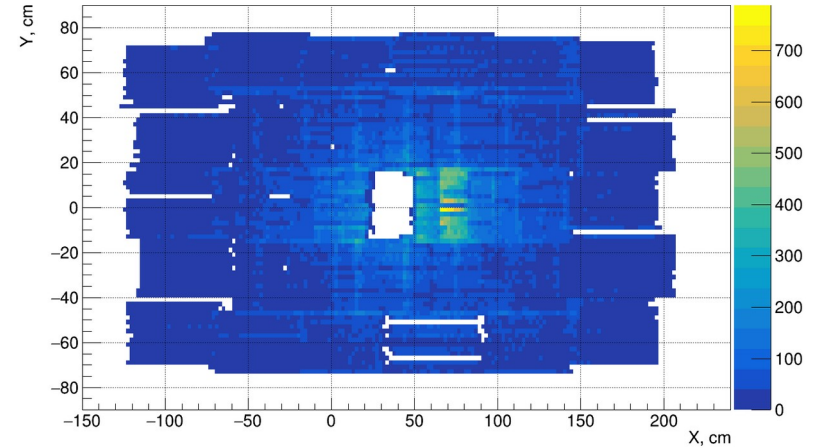


- All detectors worked normally.
- There are cases of HV breakdown (episodic). Some detectors in some runs did not work.
- One of the four HV blocks was repaired during the run.
- Future maintenance will be performed by the TOF400 group.

- Length cable correction
- Slewing correction
- MC TOF correction
- TOF700 alignment by tracks
- TOF tuning by protons.

Done
 Done
 Done
 No
 No

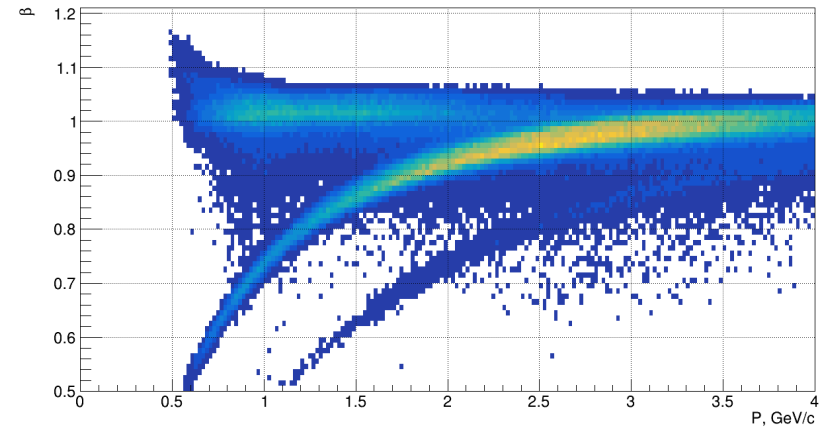
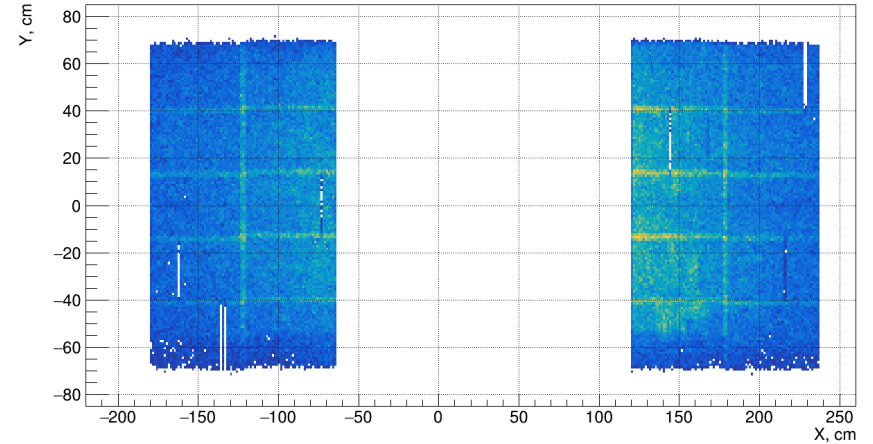
BmnTof700Hit.fY:BmnTof700Hit.fX



- All detectors worked normally.
- There are cases of HV breakdown (episodic). Some detectors in some runs did not work.
- TOF400 acceptance will be increased.

- Length cable correction
- Slewing correction
- MC TOF correction
- TOF400 alignment by tracks
- TOF tuning by protons.

Done
 Done
 Done
 In progress
 No

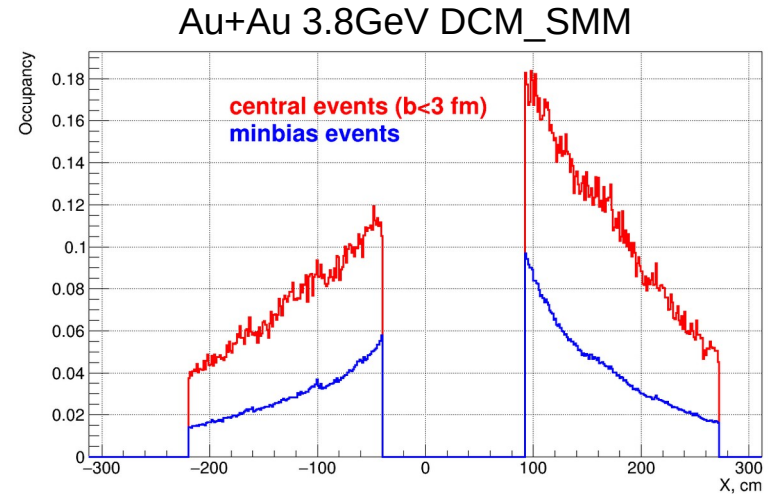
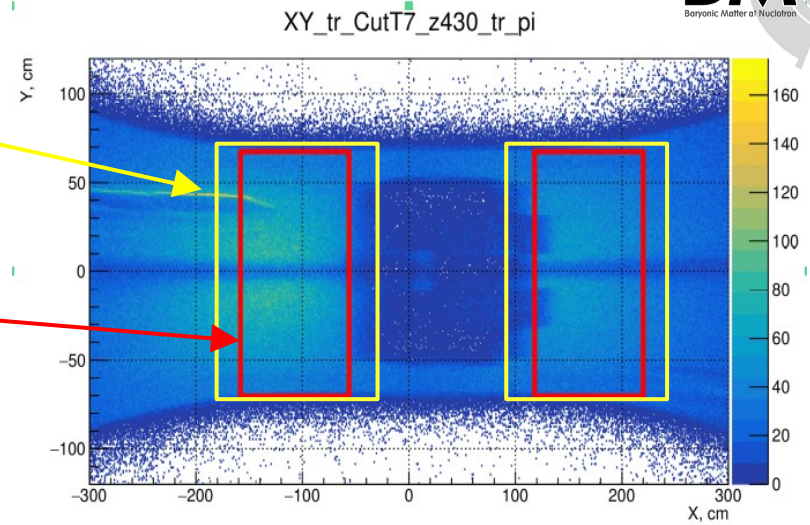
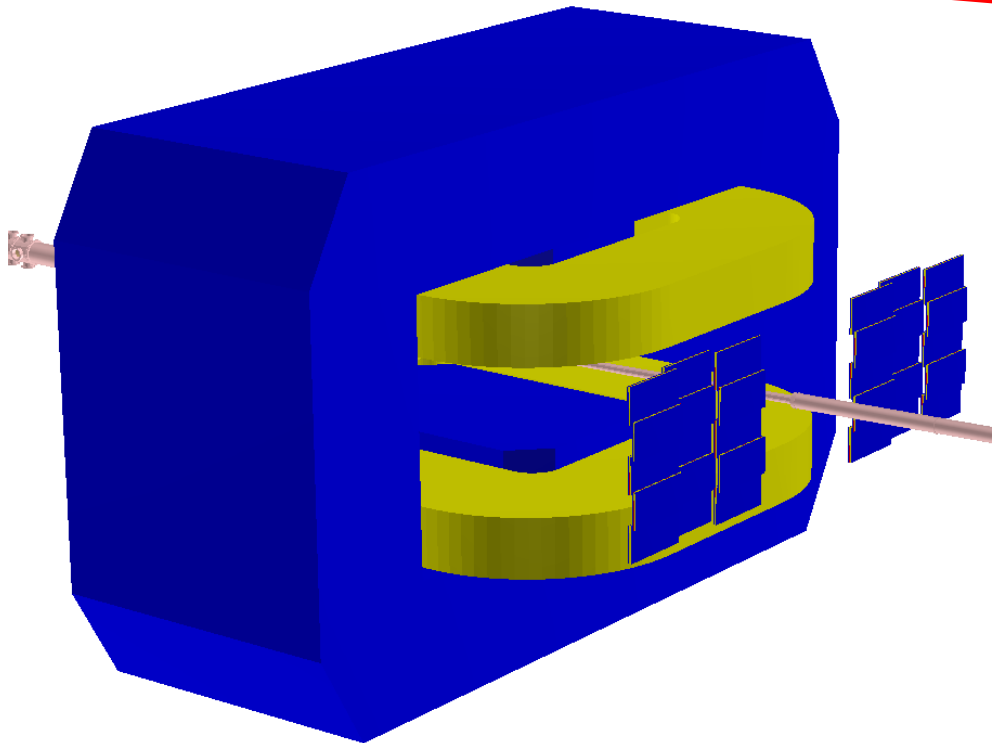


old configuration:

- 2 x 1.15x1.3 m²
- 20 detectors
- 1920 channels of FEE

new configuration:

- 2 x 1.7x1.3 m²
- 30 detectors
- 2880 channels of FEE



MRPC assembling area

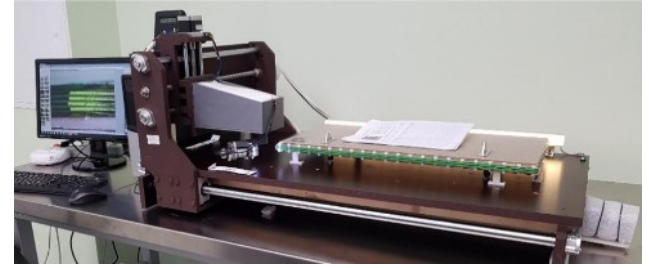
All procedure of detector assembling and optical control is performed in clean rooms ISO class 6



Glass cleaning with ultrasonic wave & deionized water



Automatic painting the conductive layer on glass



Optical inspection using a microscope



MRPC assembling

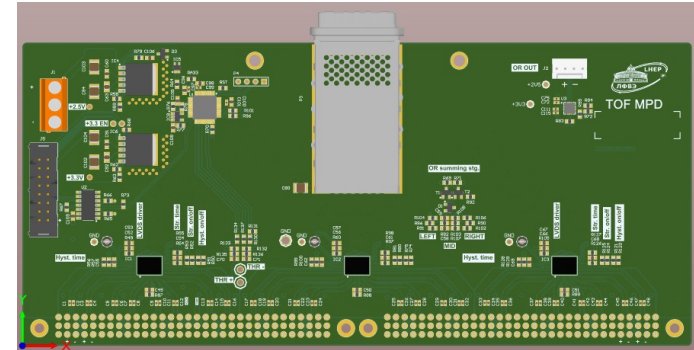
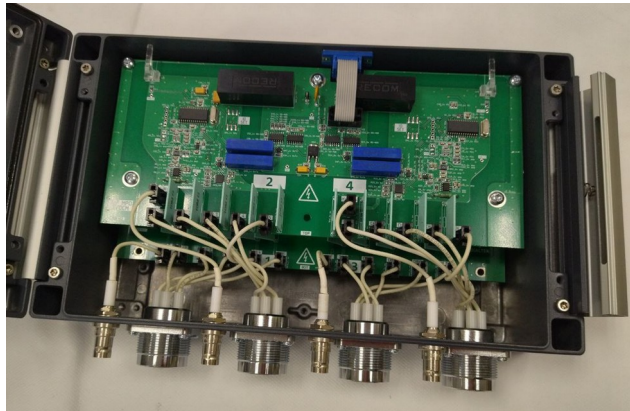
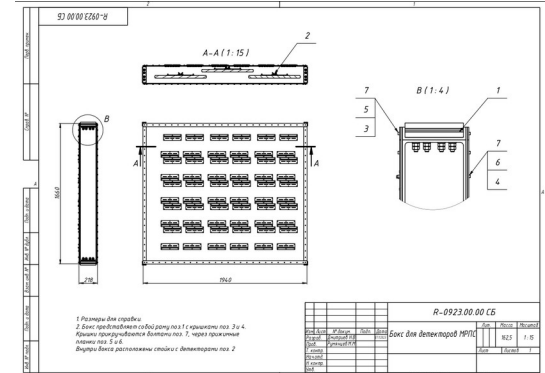
Check list

- Optic control (gap uniformity, cracks in glass)
- Primary HV testing (without gas) - up to 6 kV
- Readout pins and cables break, short-circuit and reversed polarity control
- Transmission line impedance (reflection) control
- Full HV testing (after fast pumping and filling with working gas mixture) – up to 12 kV



Transmission line impedance control

	Current system	Extended system	In stock	
Detectors	20	30	30	4 more in production
Gas box	4	2 (new design)	0	In production
FEE	80	120	80	search for a manufacturer
TDC	28	42	42	Should be tested
HV	40	60	40+24	
LV	16	24	24	
HV cable	40	60	50	Waiting for the cable
LV cable	8	12	12	
HV distributor	-	10	0	In design
Signal cable	40	60	60	





Conclusion



- Both TOF systems worked well in the last Run8.
- Future maintenance of TOF700 will be performed by the TOF400 group. But we don't have enough staff to develop and review the code.
- Some progress in data analysis of Run8 data.
- Work to expand the TOF400 system is delayed.

Thank you for your attention.

ToF400 extension MC simulation

Au+Au 3.8GeV DCM_SMM

Electrons coming from CSC before TOF

Electrons coming from TOF itself

All particles

