

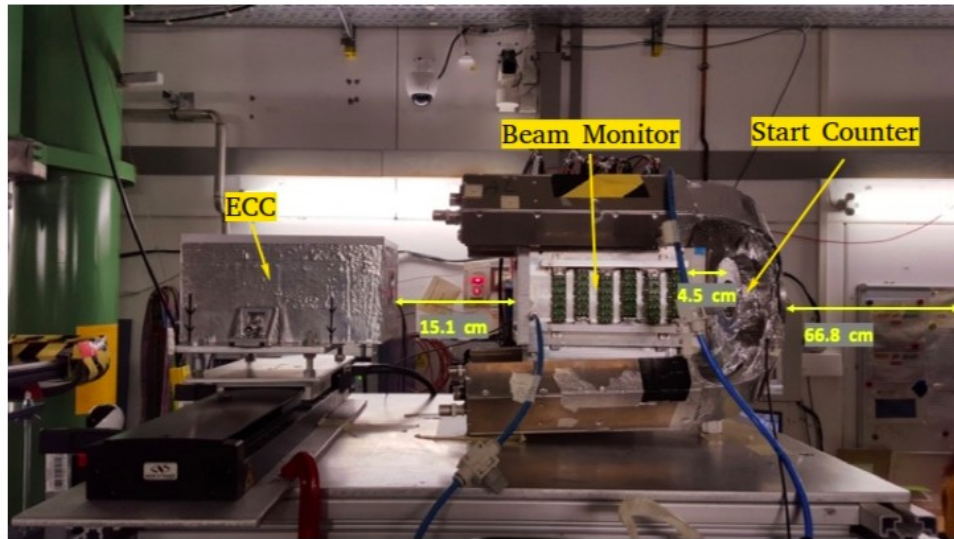
# Update on BM operations @ GSI 2020

Milano + Roma + Trento

FOOT physics Meeting

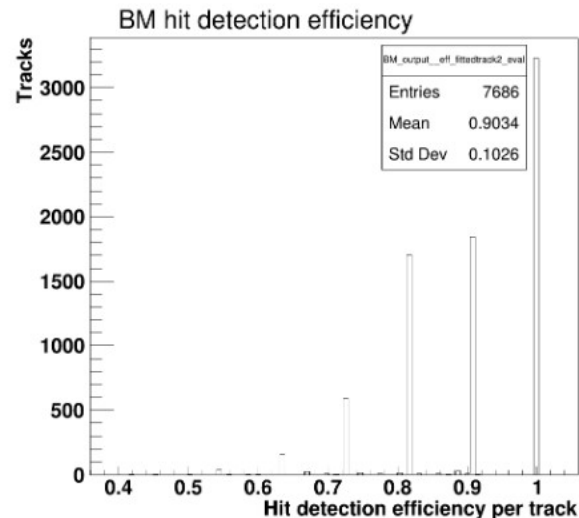
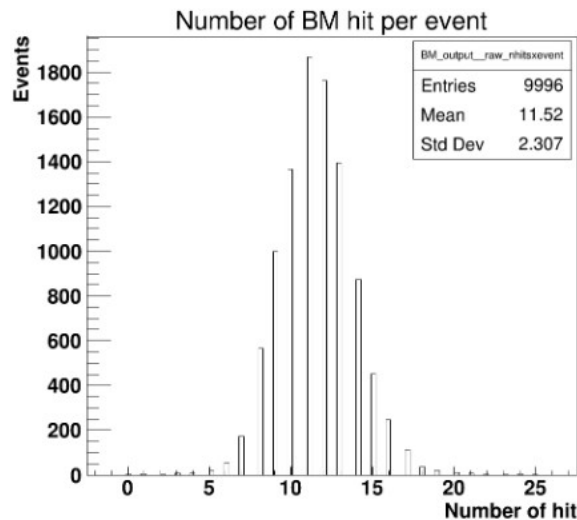
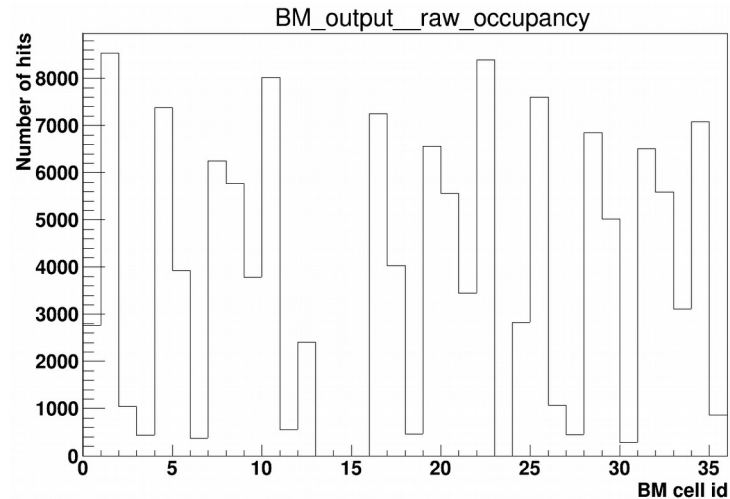
4 March 2020

# Detector setup



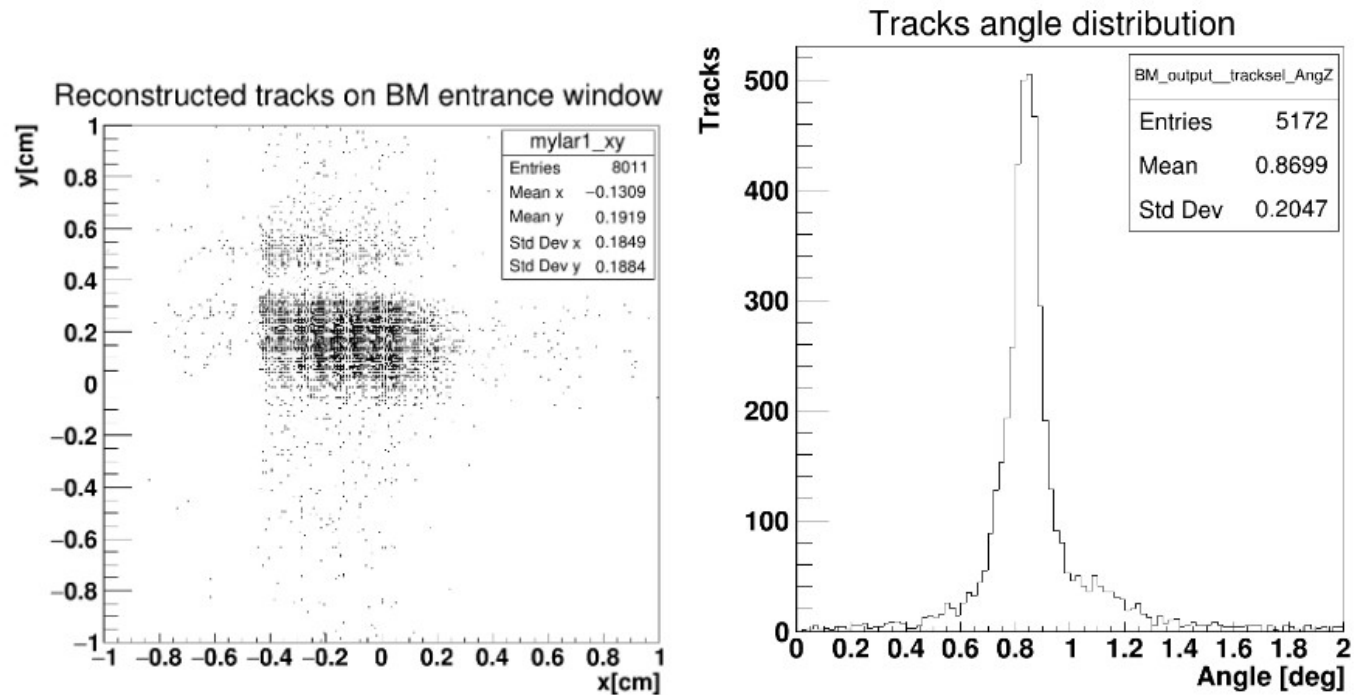
- Beam:  $^{12}\text{C}$  @ 700 MeV/u in Cave A
- Two bricks of emulsion with C and  $\text{C}_2\text{H}_4$  target
- Isocenter placed at the Margherita
- Beam time: one long shift of 7 Hours
- Total time adopted for the emulsion operations ~ 2.5 Hours

# BM working point



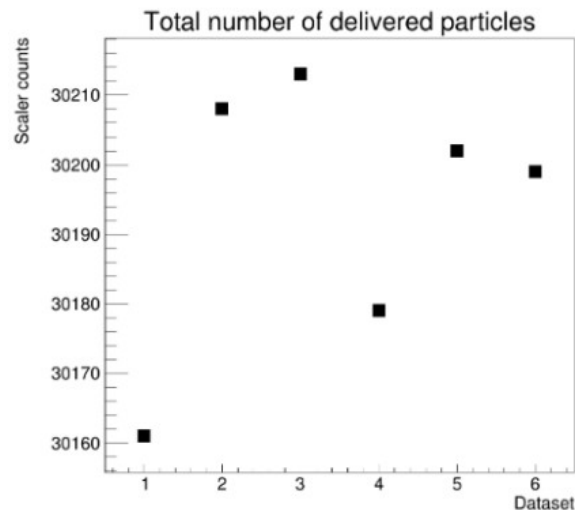
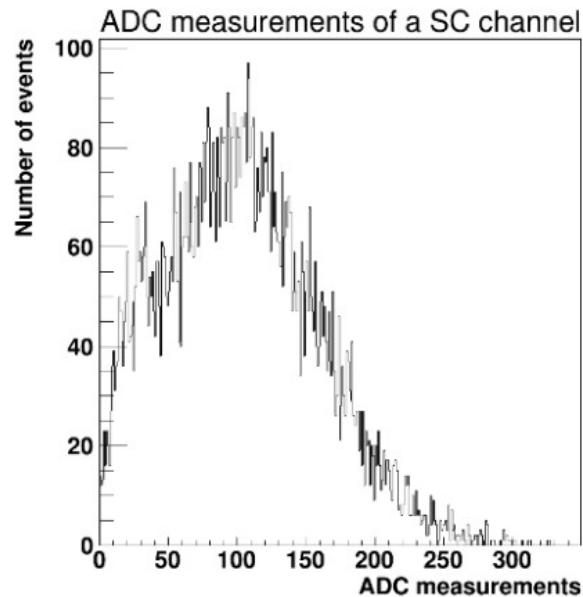
- During the beam time 3 channels give too few signals.
- Since the reconstruction worked without problems, we avoided the change of modules/cables etc. to save time.
- HV adjusted at 1900 V with a mean hit of 11.5
- Hit detection efficiency  $\sim 0.9$

# GSI $^{12}\text{C}$ beam at 700 MeV/u



- GSI beam **without** the irradiation pattern for the emulsion setup

# Emulsion: counting results



## Expected irradiation pattern:

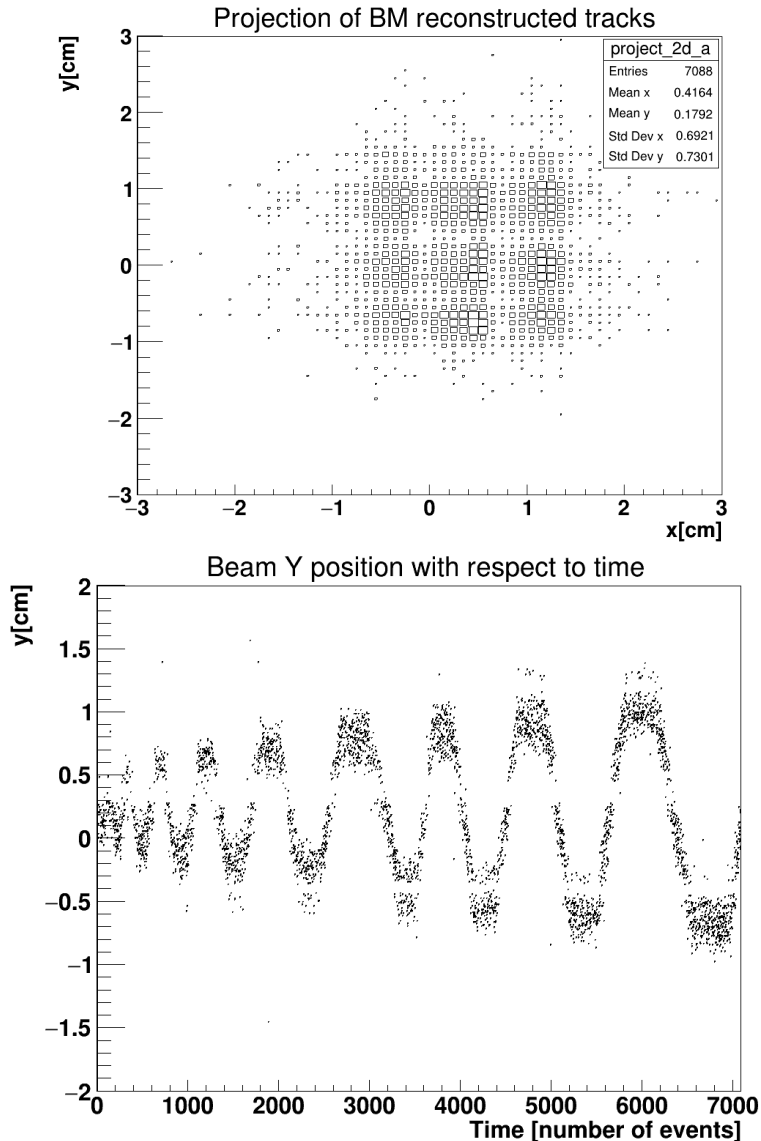
- 625 beam spots in  $2.4 \times 2.4 \text{ cm}^2$
- Beam step: 1mm
- Number of particle per spot: 48
- Total number of particles: 30000

## Counting results:

- No double particles counting from the adc
- The total number of particles delivered is stable
- C target: 30179 particles  
C2H4 target: 30199 particles



# Emulsion: tracks projection



- The expected area of about  $2.4 \times 2.4 \text{ cm}^2$  has been covered
- No relevant changes has been detected among the different repetitions

# BM to do list

- **Software development**

- Finalize the BM multi-track reconstruction algorithm (few weeks)
- The software development of the BM should be finalized (except for new ideas or requirements)

## **Data analysis**

- GSI electronic setup: try to resolve the causes of the BM-VTX loss of correlations (thanks to Chris, a new tentative will be done very soon)
- Finalize the BM+MSD paper (few weeks)
- Check the BM rejecting power on the events in which the projectile has fragmented on the ST or in the BM itself (something already done, it will be resumed from April)
- Check the BM resolution and its impact on the inverse kinematic approach (new task)
- ...