

# CAMERA Status

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*COMPASS Technical Board Meeting*

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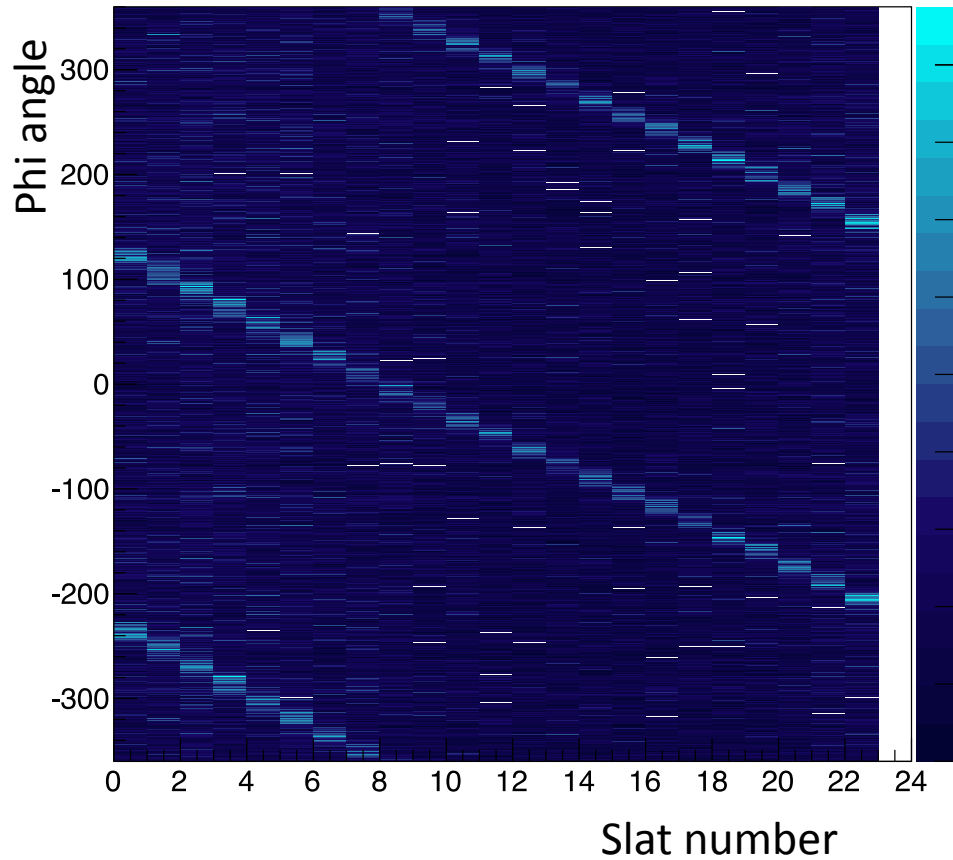
# Calibration Procedure

1. Laser signals injected in all scintillators:
  - Calibration of relative timing between PMT channels
  - PMT gain monitoring & adjustment
2. Exclusive  $\rho^0$  events
  - Calibration of Z coordinate and Phi angle
3. Dedicated runs with trigger on cosmic particles:
  - TOF calibration with relativistic particles
4. Runs with pion beam and beam+Camera trigger:
  - Final HV adjustment to optimize the dynamic range of recoil proton signals
  - TOF check with elastic  $\pi p$  scattering
  - Amplitude calibration

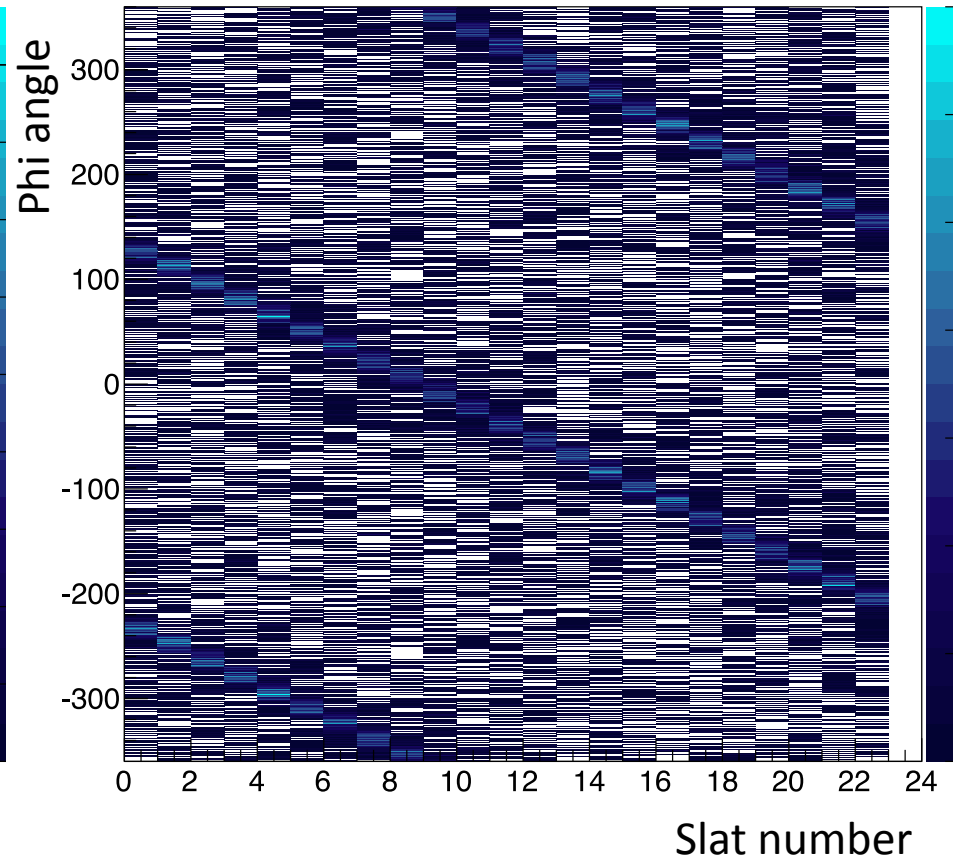
# Phi Correlation

Phi angle of missing spectrometer momentum  
Plotted versus the fired slat number

**Ring A**

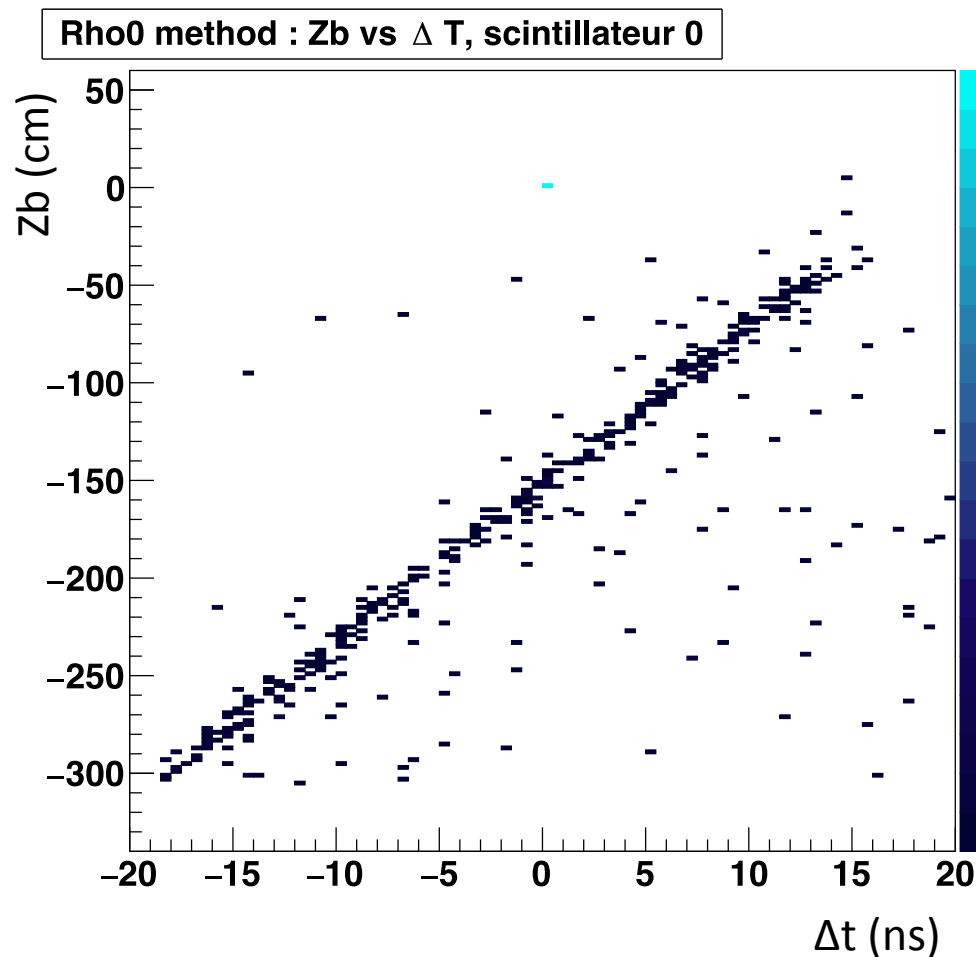
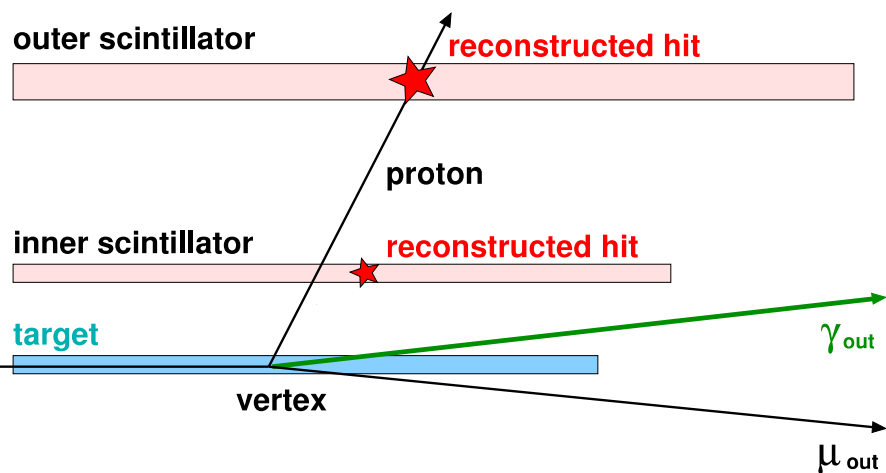


**Ring B**



# Z Coordinate Calibration

Extrapolated Z coordinate of missing spectrometer momentum  
Plotted versus the  $(t_{\text{up}} - t_{\text{down}})$  of the slat in the good Phi sector

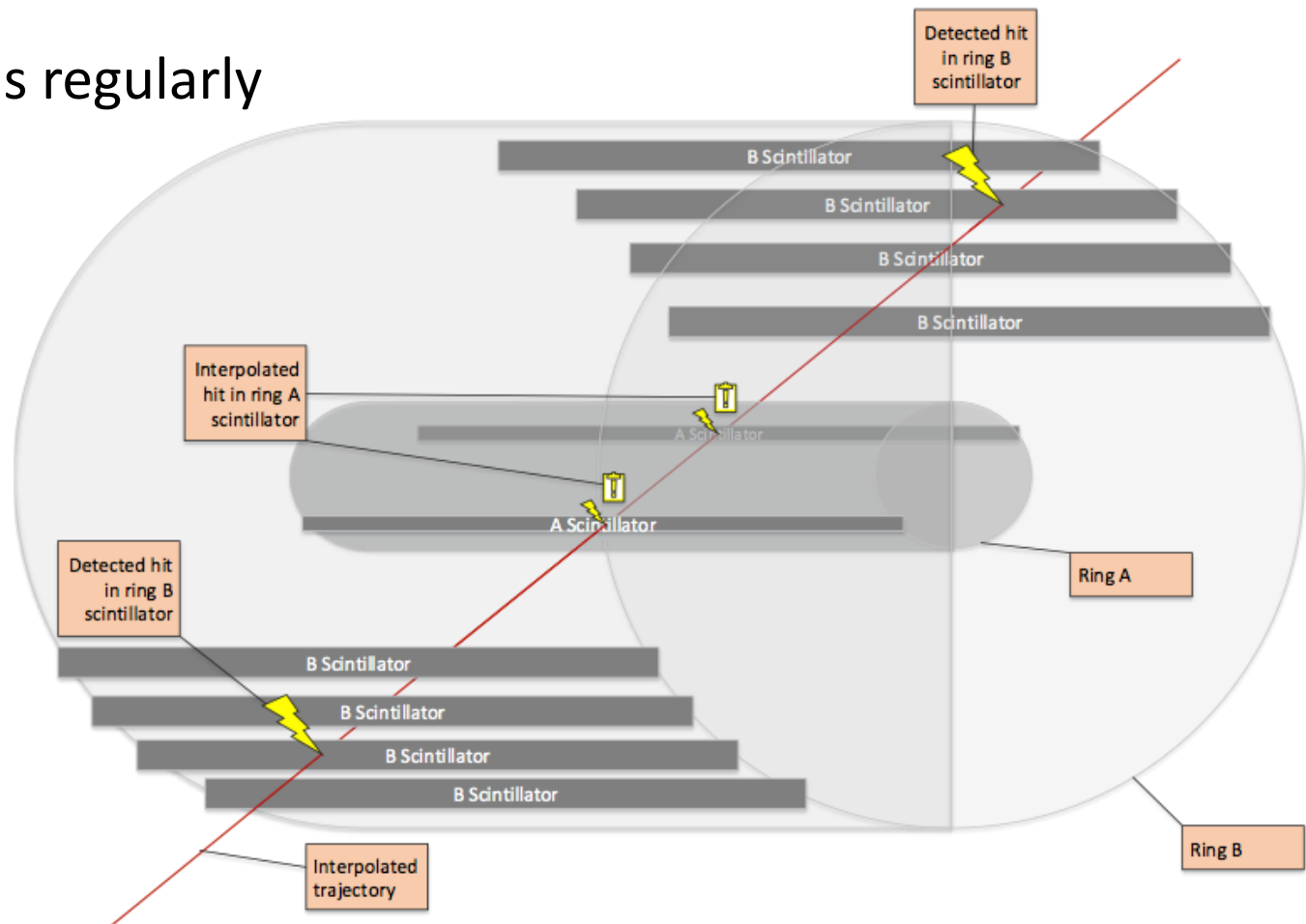


# Calibration with Cosmic Muons

Background-free signal of MIPs with well defined velocity

Path length  $L$  derived from  $(R, \Phi, Z)$  of hits (from  $\rho^0$  calibration)

Cosmic trigger runs regularly  
taken during MDs

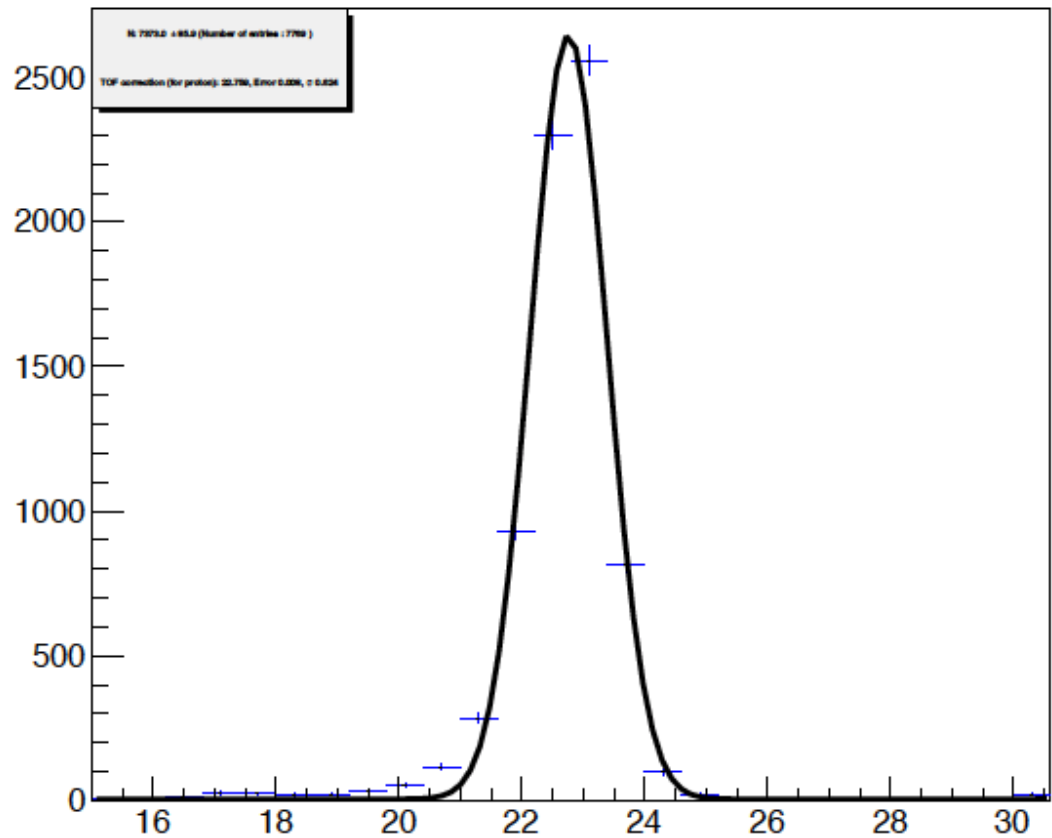


# Typical TOF Calibration

For a given  $A_i, B_j$  combination, the TOF calibration is derived as

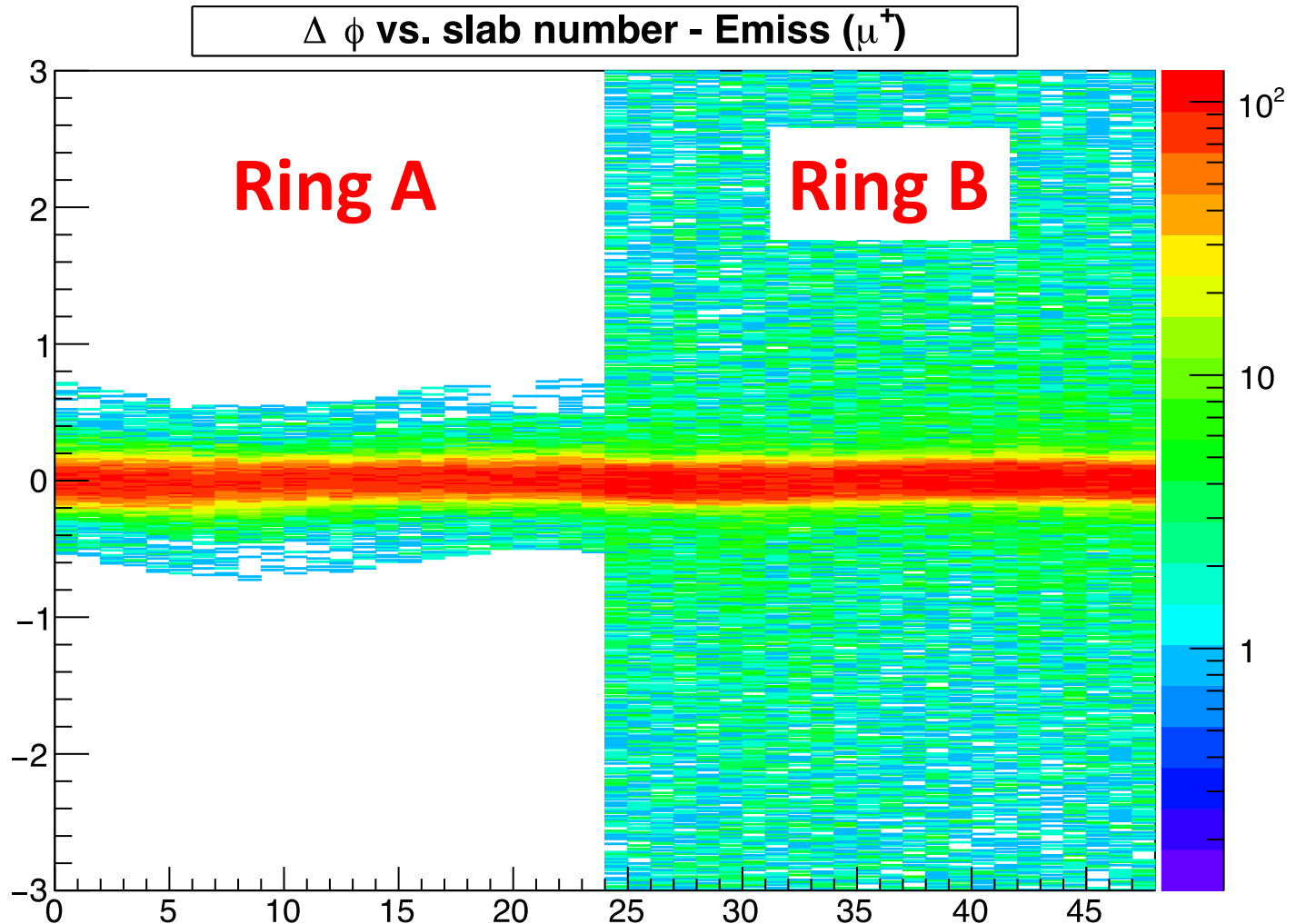
$$\text{TOF}_{\text{corr}} = (t_{\text{mean}}^{B_j} - t_{\text{mean}}^{A_i}) - L/\text{speed}$$

TOF correction distribution scintillateur A0 B0



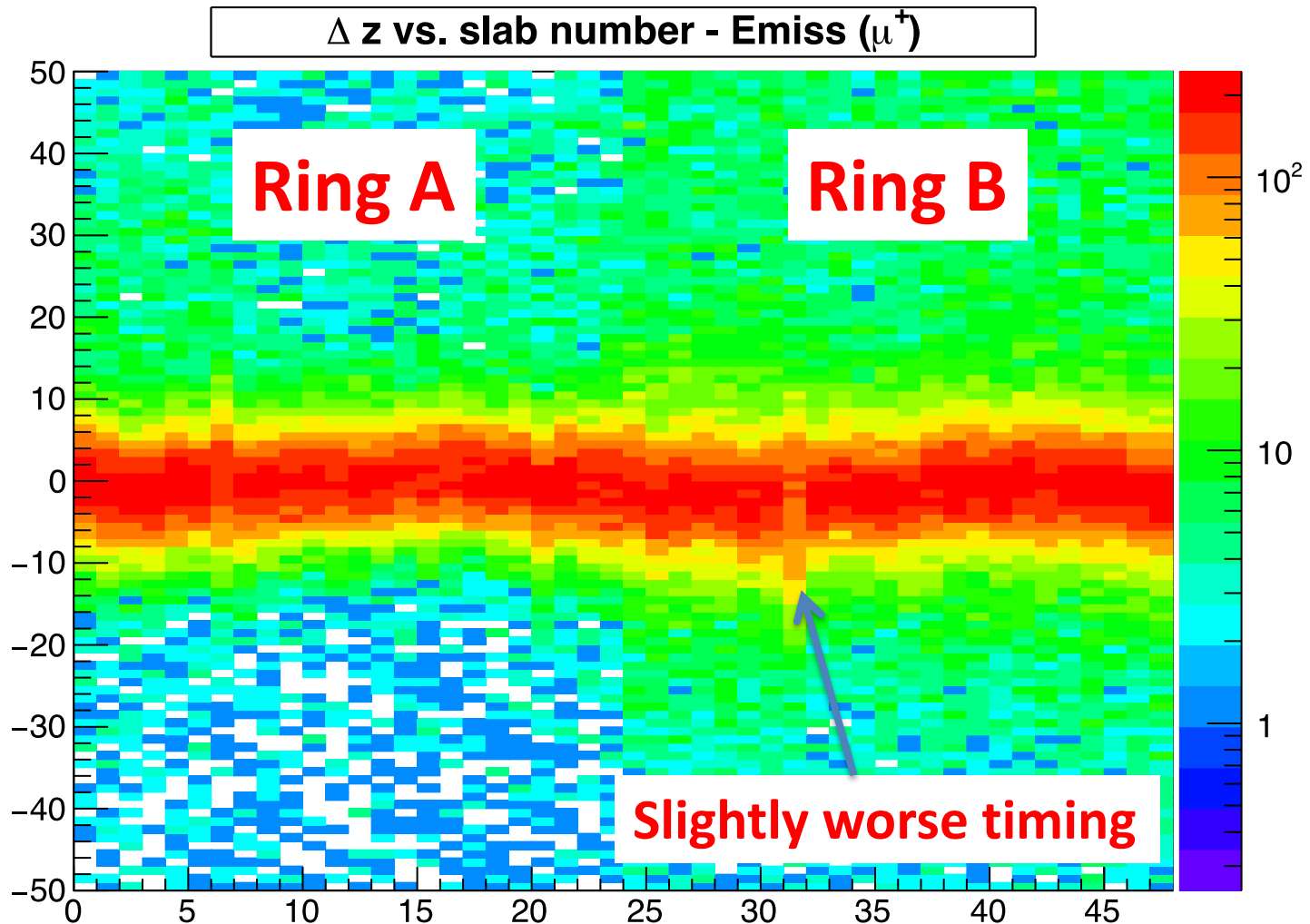
# Impact on Exclusivity Variables: $\Delta\Phi$

Slightly wavy shape probably due to CAMERA not being perfectly centered in the transverse plane



# Impact on Exclusivity Variables: $\Delta Z$

Globally well centered, one B channel with slightly worse timing

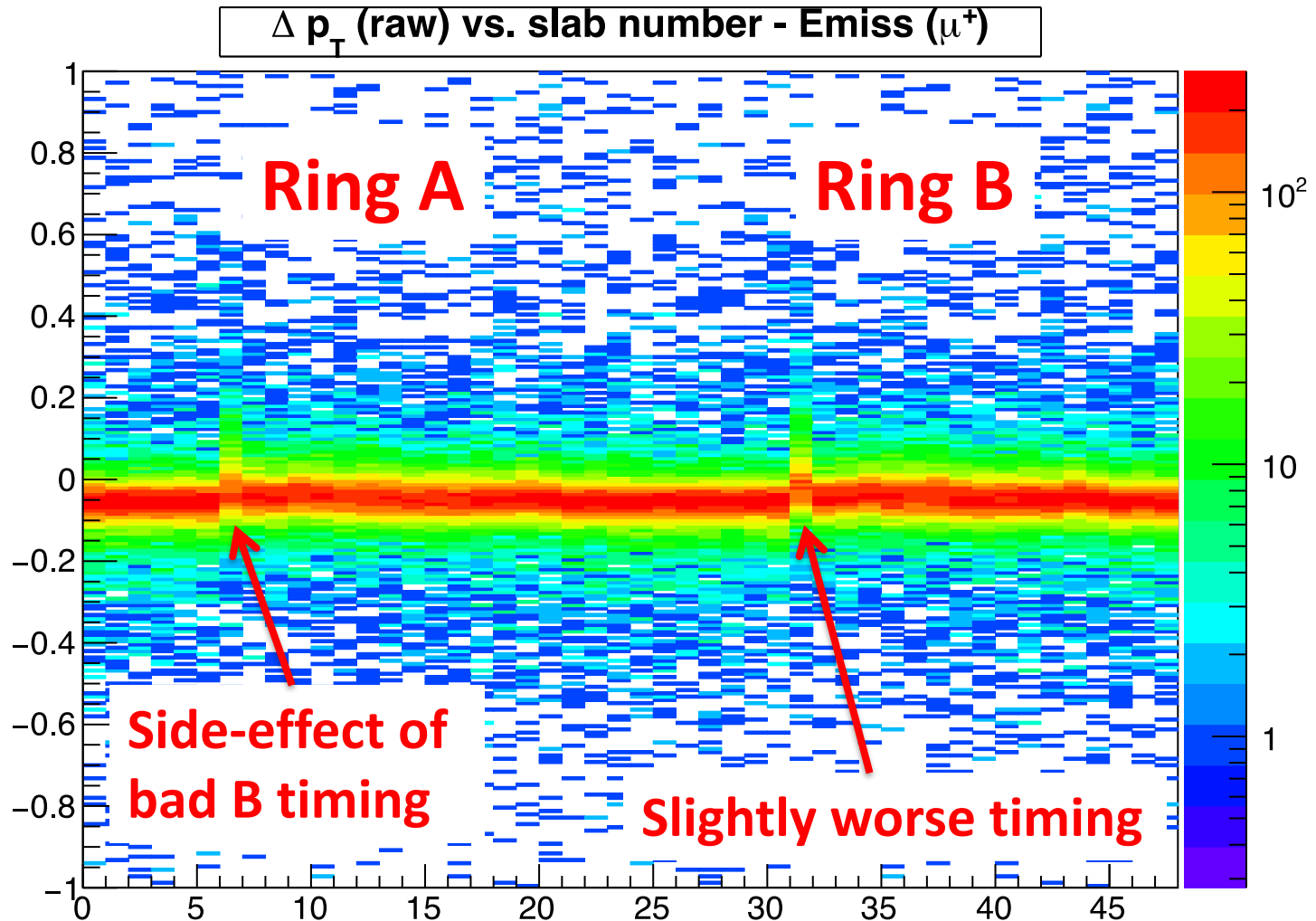




# Impact on Exclusivity Variables: $\Delta p_T$

Not (yet) corrected for energy loss in the target.

One problematic channel (same as previous slide).



# Outlook

- Systematic checks of time-dependence of calibrations ongoing
- Calibration of signal amplitudes still do be done (not used in analysis so far)
- CAMERA can now be used for exclusive events selection – code to be handed over to the data analysis community (hopefully within the next couple of weeks)

# CAMERA Removal and Storage

- A date for the removal of CAMERA from the target area has to be defined soon
  - Possible time slot: 21 to 23 of October
  - Engineer (J.Y. Rousse) and technicians need to be booked well in advance
- Where to store CAMERA?
  - Saclay's antenne excluded due to space limitations
  - Area surrounded by fence in 888 available?