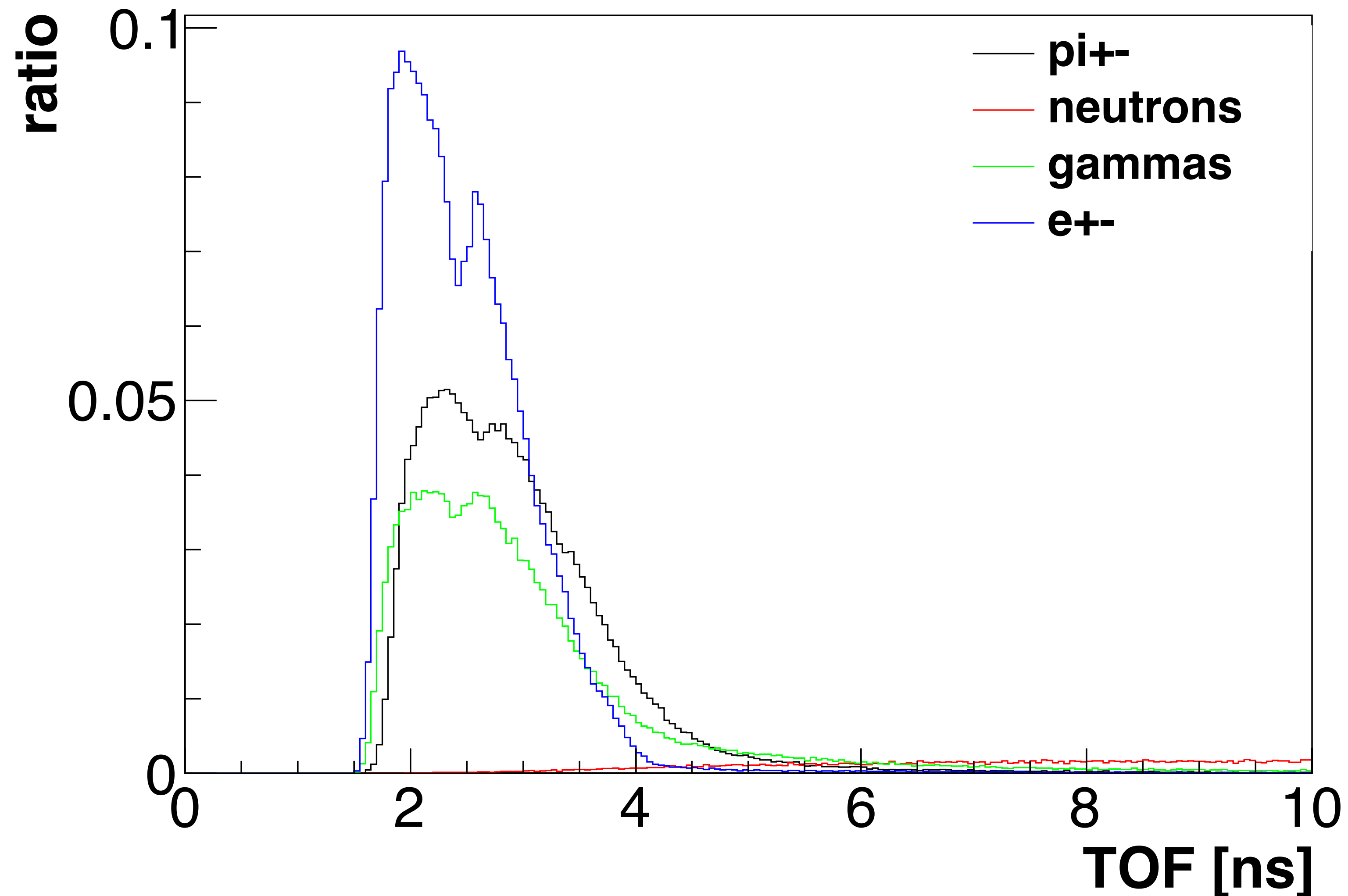


# Status report (11 Jan. 2017)

Jongwon Hwang

# Time-of-Flight according to the sort of particles?

**Threshold  $> 0.3$  MeV**

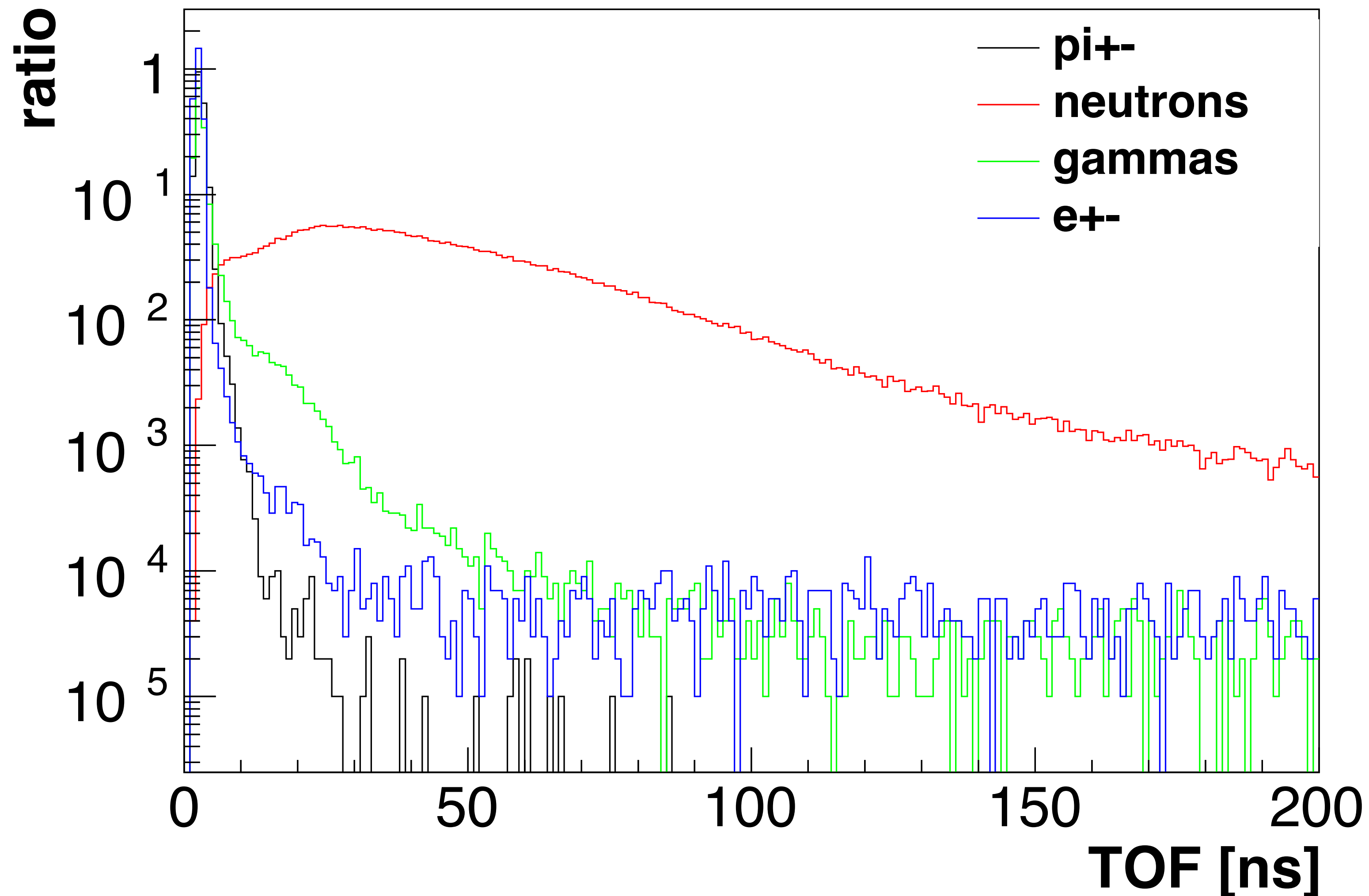


**Top Detector Height  
825 mm**

**Top Annihilation**

# Time-of-Flight according to the sort of particles?

**Threshold  $> 0.3$  MeV**

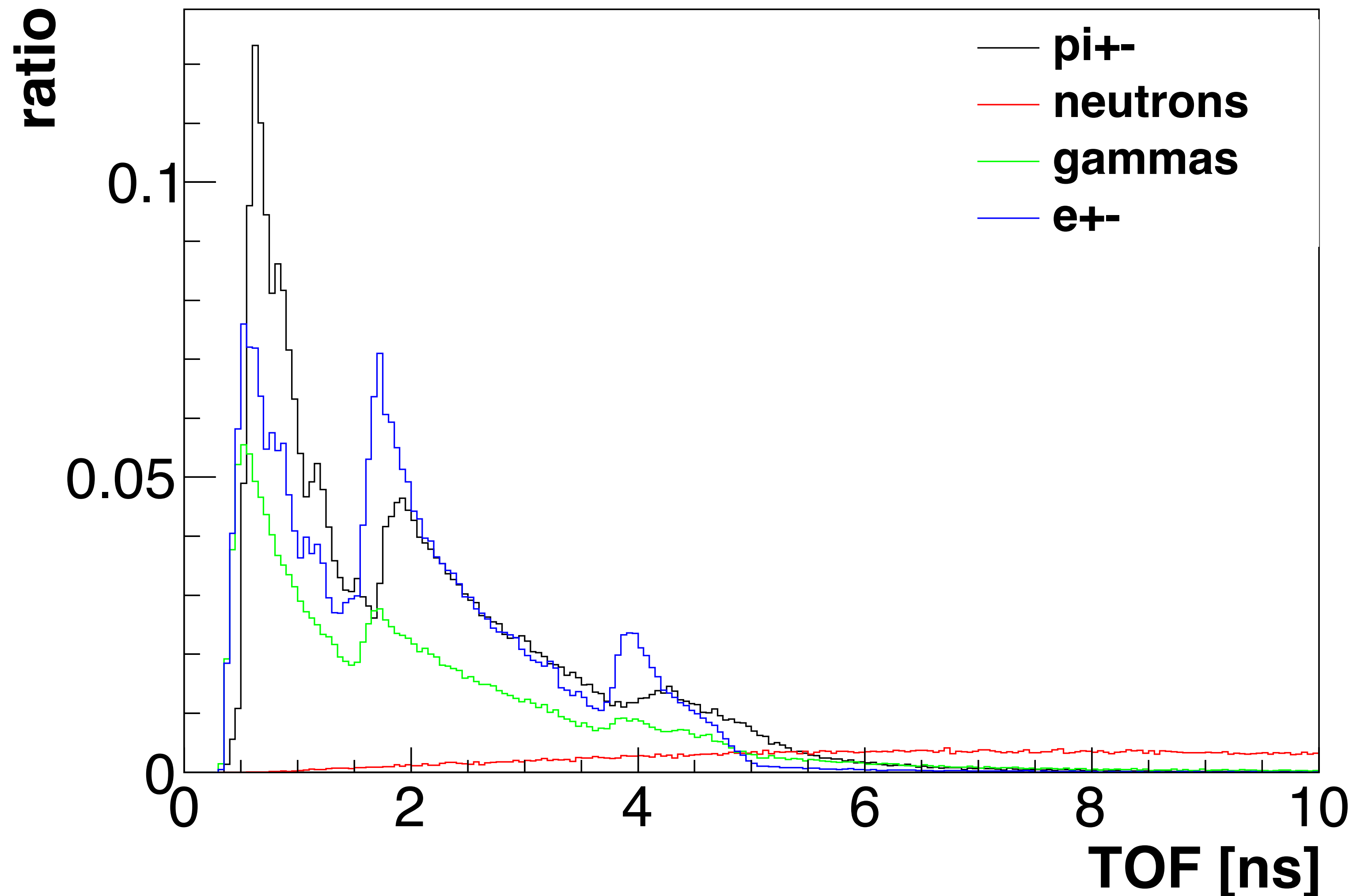


**Top Detector Height  
825 mm**

**Top Annihilation**

# Time-of-Flight according to the sort of particles?

**Threshold  $> 0.3$  MeV**

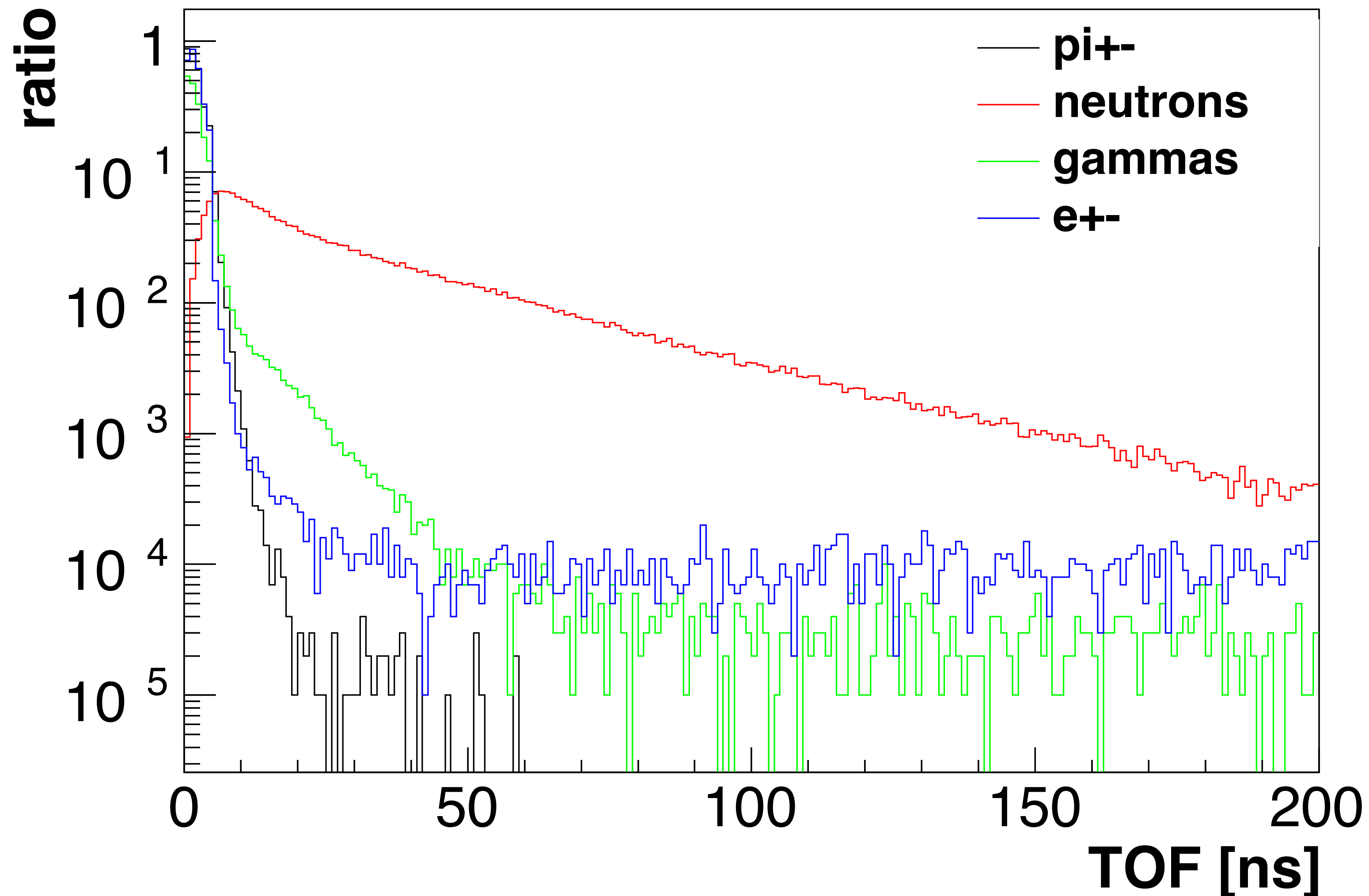


**Top Detector Height  
825 mm**

**Bottom Annihilation**

# Time-of-Flight according to the sort of particles?

**Threshold  $> 0.3$  MeV**

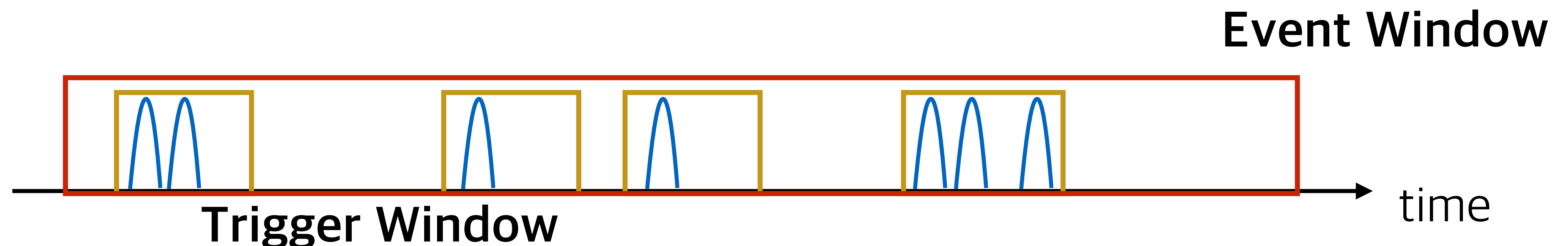


**Top Detector Height  
825 mm**

**Bottom Annihilation**

# How to take data during experiment?

1. Anti-H starts to fall:  
Start the DAQ for the NEW event (reset timer).
2. Any single signal detected (either from cosmic-ray or from anti-H):  
Take the data for the **certain trigger window (128 ns?)** with the time stamp.
3. End of the **certain event window (500 ms?)**:  
End the DAQ for the current event.

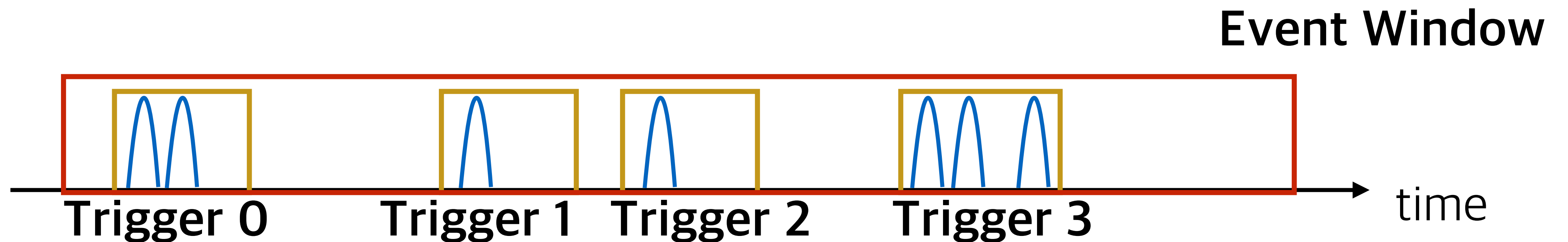


# How to analyze data?

1. For the single event, check **each trigger** one by one.
  1. Clustering: merge hits of adjacent bars induced by a single track
  2. Cosmic-ray rejection: determine whether this trigger caused by cosmic-ray or by anti-H annihilation using (1) # of hits, (2) hit pattern, (3) time difference, etc.
  3. We cannot identify the sort of particles.
2. Select only one of them as an anti-H annihilation trigger.
3. Reconstruct the TOF, the annihilation vertex, ...

# Simulation: anti-p + cosmic-rays

- Anti-proton annihilation & cosmic-rays
- Merge two different primary beams in a single event.
- Can set the event window (default = 500 ms).
- Set the trigger number.





# To-do List

- Find the condition of clustering.
  - Check the dT-dR correlation.
- Check the current cosmic-ray rejection method.