

# TOF commissioning data needs

## Cosmics before beam:

1. 1M cosmic events. Current trigger: Total energy fADC sum. Desired trigger: hits in three or more neighboring modules.

## Beam without magnetic field:

1. 500K events at the lowest beam current / target thickness. Desired trigger: one or two charged tracks. This sample will be used for timing calibrations and geometrical alignments.
2. 500K events at the highest beam current / target thickness. Any trigger with charged tracks. This sample will be used to study TOF performance under high rates.
3. 5-6 short runs (~100K events each) at variable HV settings to do PMT gain balancing. Desired trigger: single charge track at the low beam intensity.

## Beam with solenoid magnetic field:

1. 5-6 short runs (~100K events each) at variable HV settings to do PMT gain balancing. Desired trigger: single charge track at the low beam intensity. This sample will be used to study possible effect of fringe magnetic field on PMT performance.
2. 10M (or more) events at the standard running conditions to do final TOF calibration. Preferred reactions to trigger upon are the ones with easily identifiable pions/kaons due to narrow states or strangeness conservation like  $\gamma p \rightarrow \Lambda^0 K^+$  or with Ks .