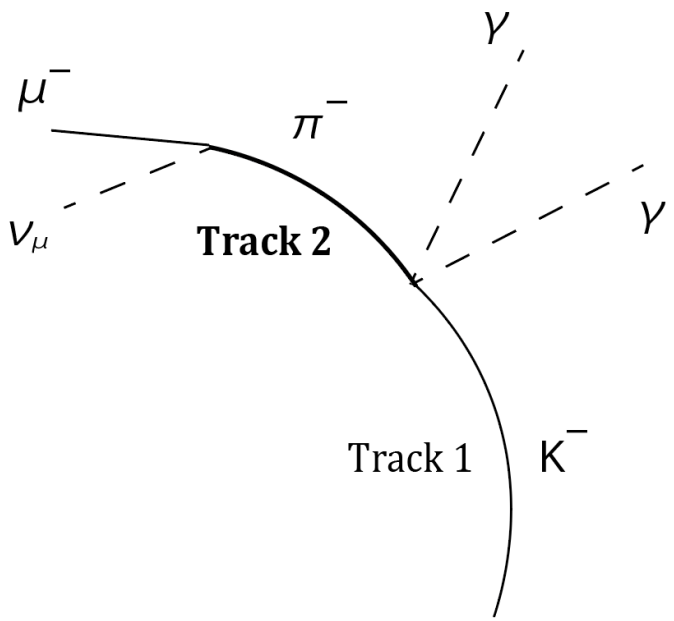
Introduction

Improving kink finder and detected kink and displaced vertex in TPC for SM particles, LLP, SUSY …

→ It is good study to simulate power of TPC

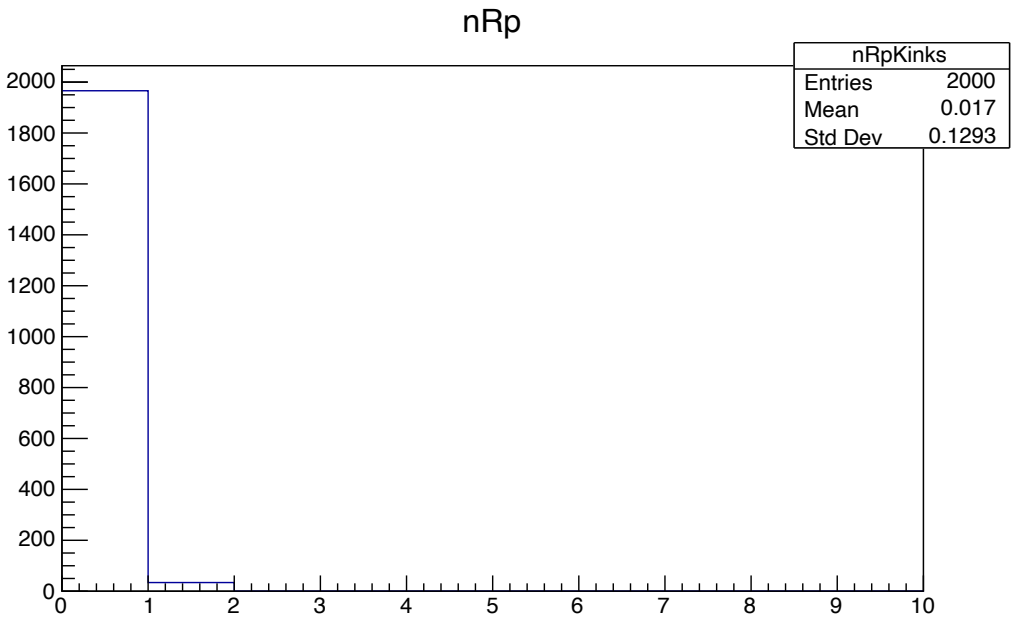
First, we check Kaon events

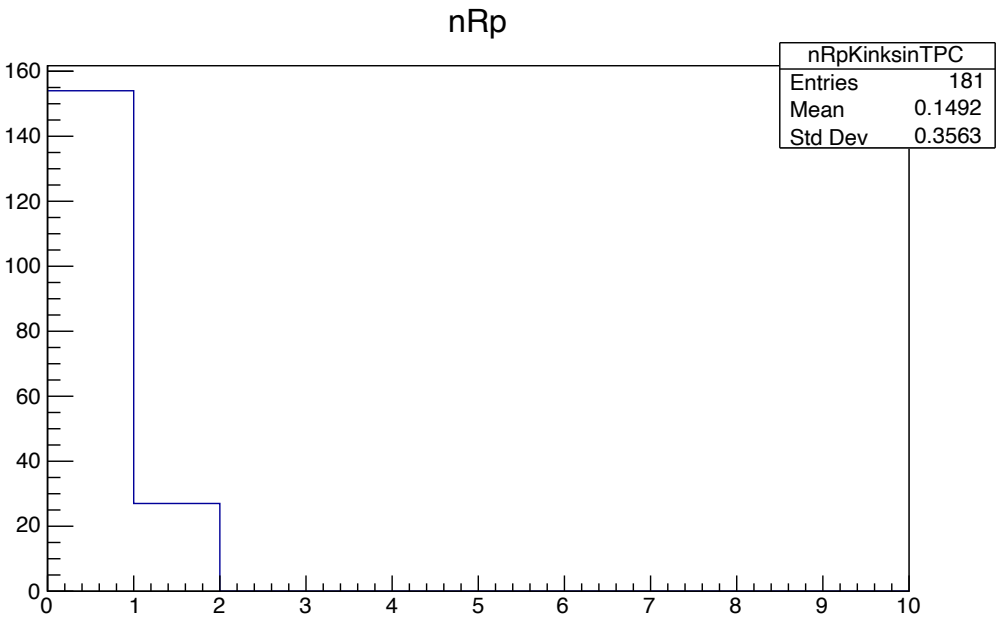
Ex)



Number of kinks by standard kink finder

Kink inside TPC:





inside TPC: $r_{in} > 329 + 100$ [mm]

$r_{out} < 1770 - 100$ [mm]

$z_{max} < 2350 - 100$ [mm]

Efficiency: 181/200 ~ **9**% ***terrible!***

I confirmed some events by event display.

→ it is diffcult to detect curling tracks as kink?

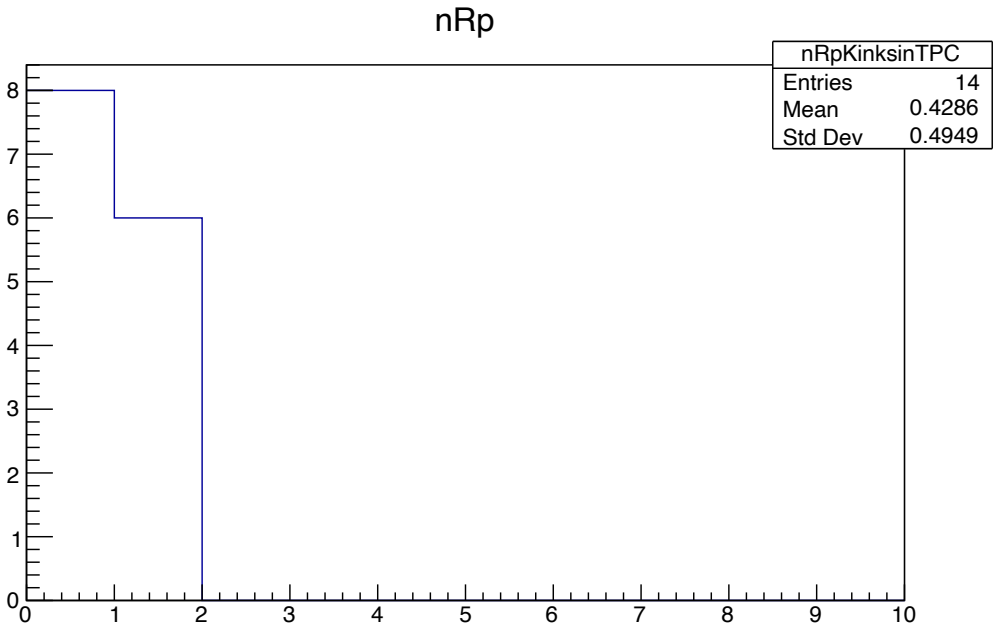
Number of kinks by standard kink finder

inside TPC: $r_{in} > 329 + 100$ [mm]

$r_{out} < 1770 - 100$ [mm]

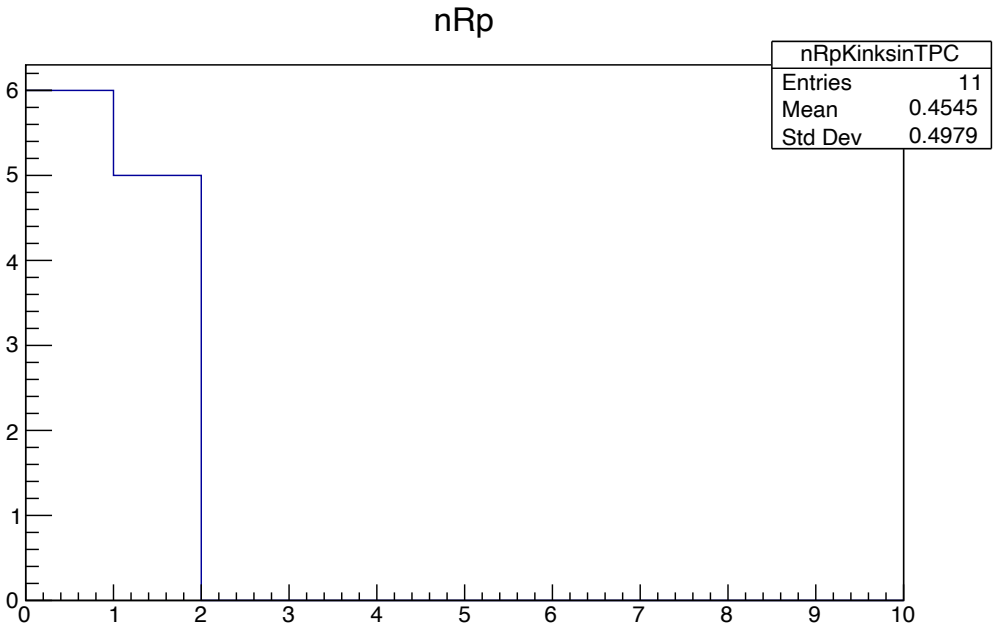
$z_{max} < 2350 - 100$ [mm]

E_{kaon}>5 GeV



14/2000~0.7%

E_{kaon}>10 GeV



11/2000~0.5%