

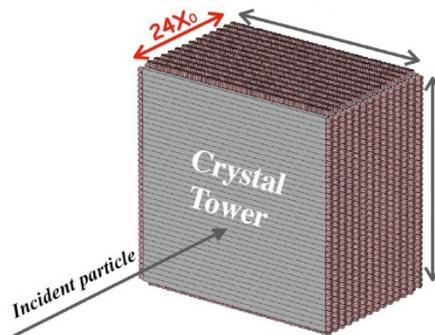
# 600mm×600mm tower 粒子数分布

张洋

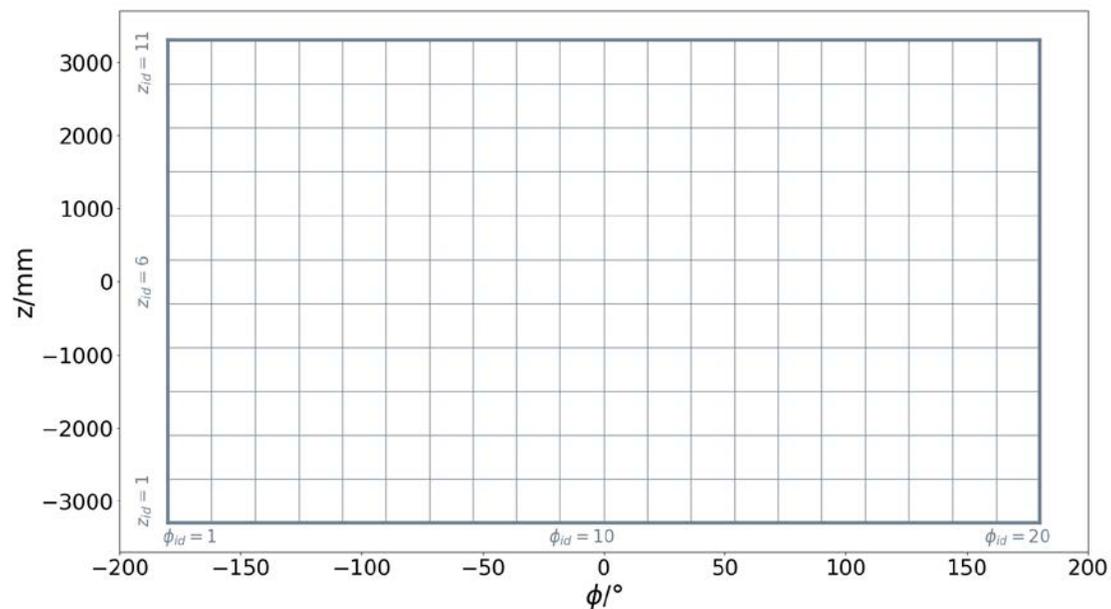
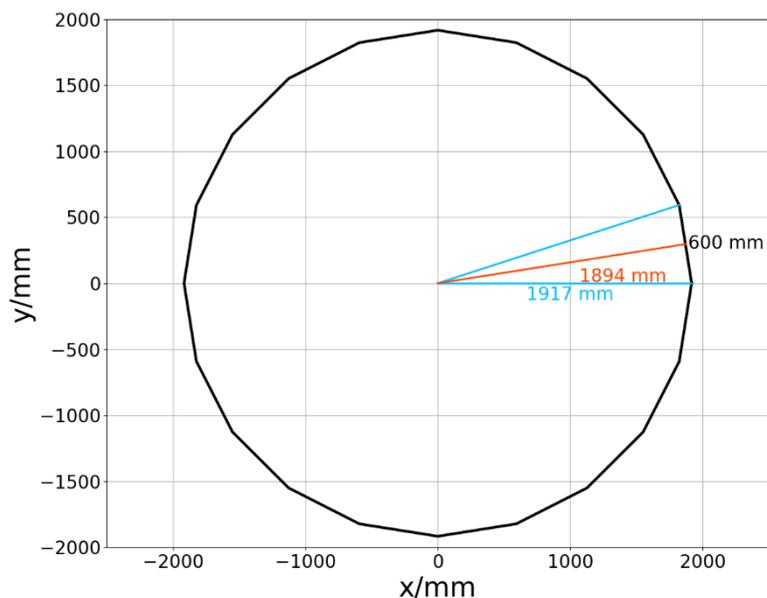
2023年2月22日

# 虚拟的几何

- 统计 tower 中的粒子数分布
- ECAL桶部 xy 平面为正20边形
  - 边长 600 mm
- 计算交点:



- 根据粒子的初始动量，计算粒子与半径  $r=1917$  mm, 长  $z = 6600$  mm 的圆柱形的交点

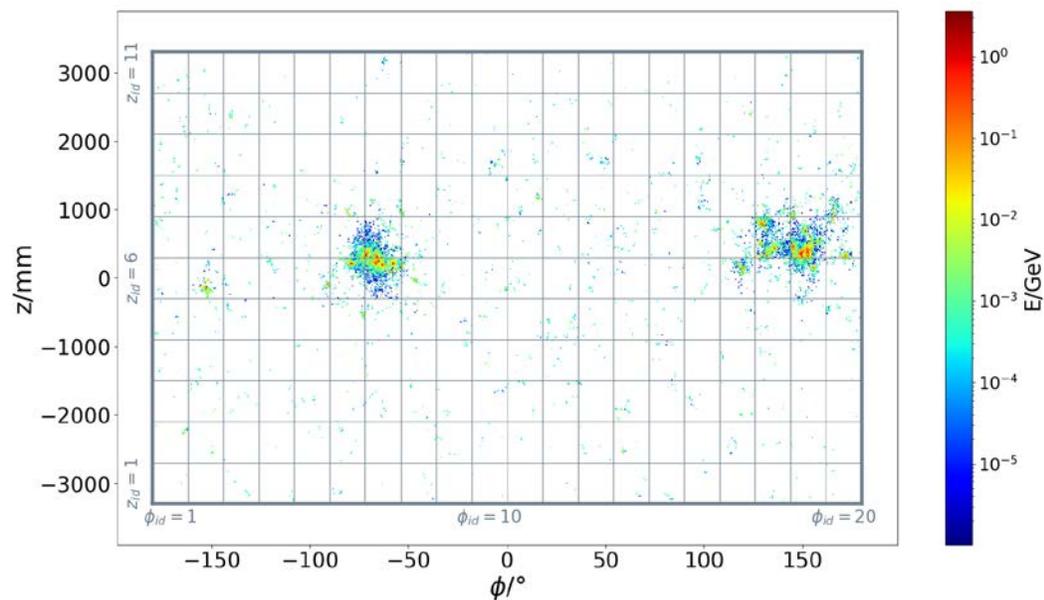
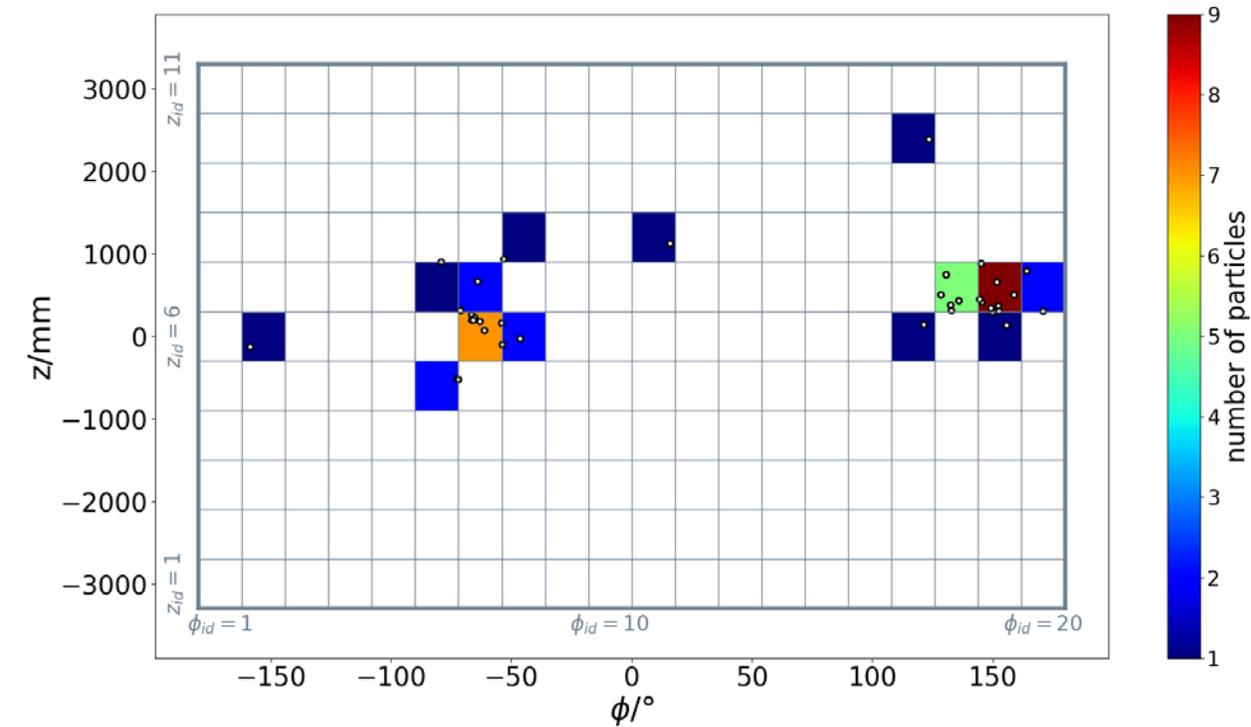
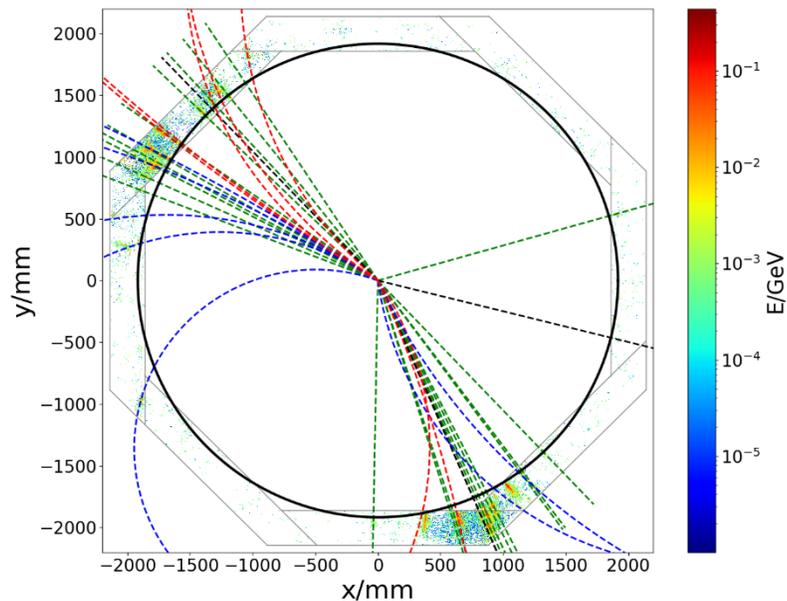


# 事例显示

➤  $e^+e^- \rightarrow \nu\bar{\nu}H, H \rightarrow gg$

■ event 2

[/cefs/higgs/zyang/cepcsoft/CEPCSW/yang/physics/digidir/](#)



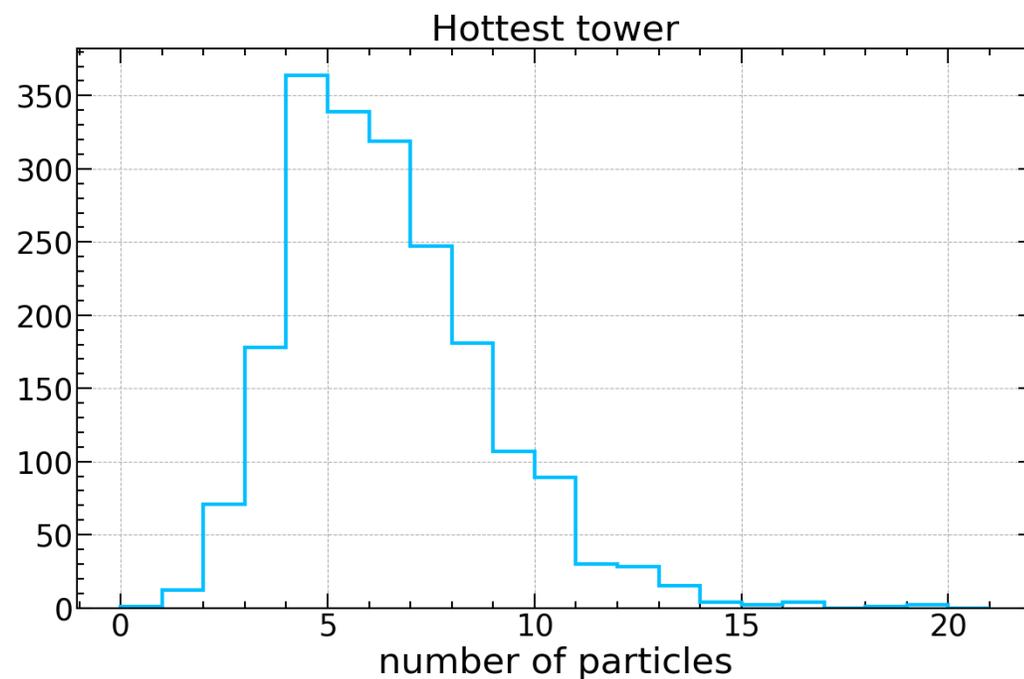
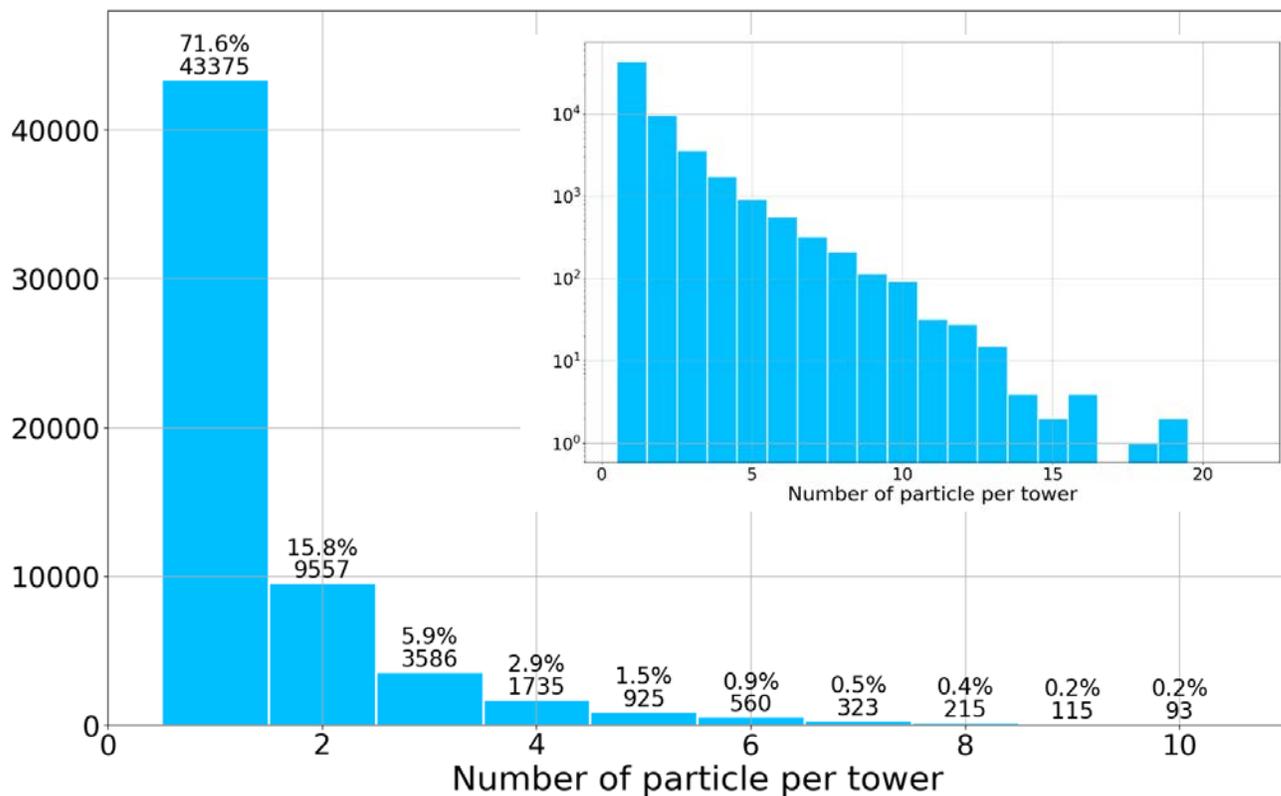
# tower 中粒子数分布

➤  $H \rightarrow gg$  , 1994 events

■ 共 60572 towers 有粒子击中

◆ 最多一个 tower 中有19个粒子

■ 每个事例中击中粒子数最多的 tower

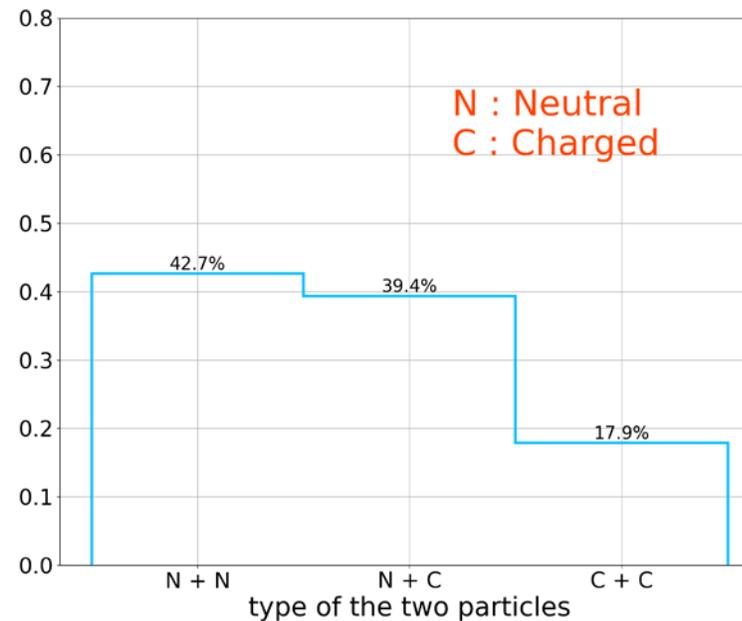
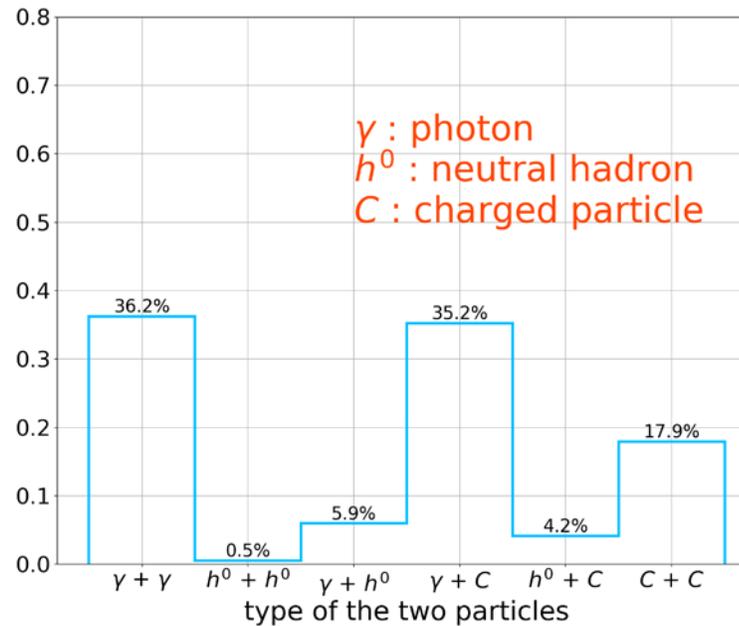
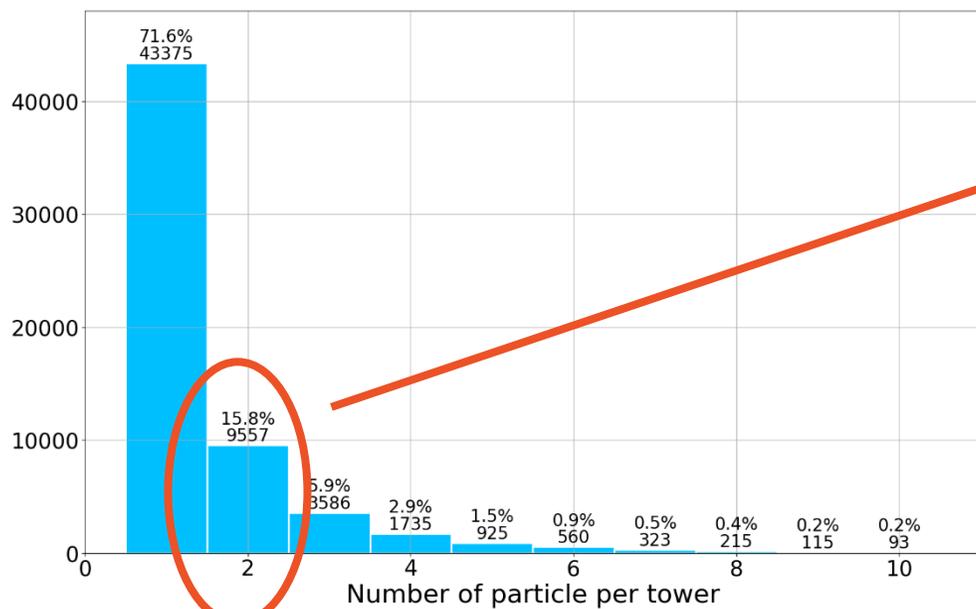


# tower 中粒子数分布

➤  $H \rightarrow gg$  , 1994 events

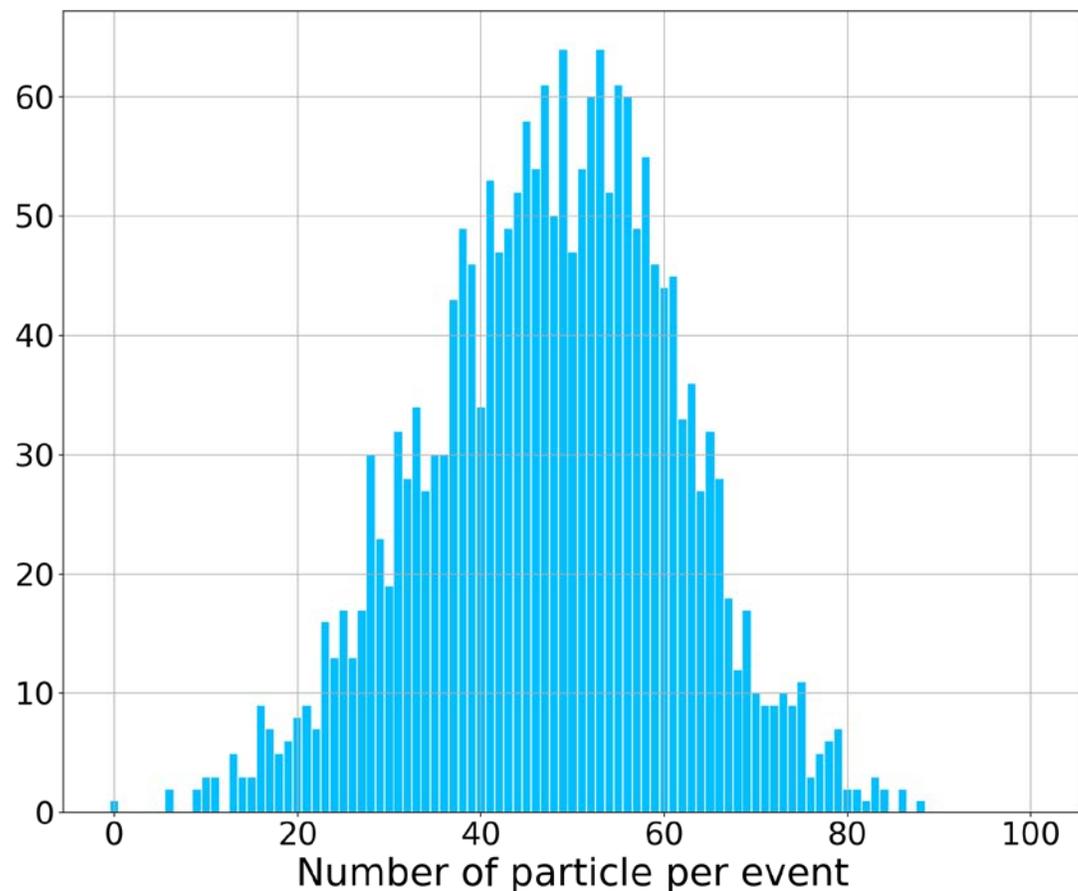
■ 共 60572 towers 有粒子击中

◆ 最多一个 tower 中有19个粒子

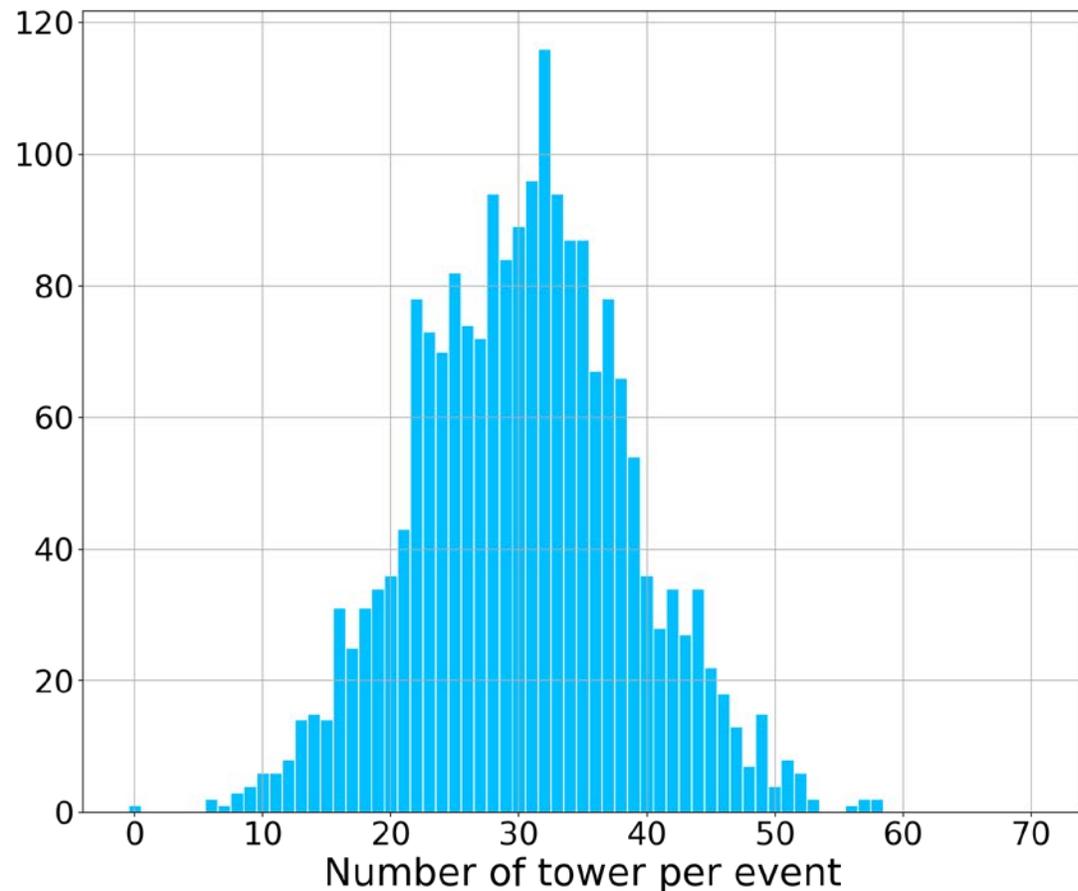


# 每个事例中的粒子数与 tower 数

➤ 每个事例中，击中量能器桶部的粒子数



➤ 每个事例中被击中的tower数

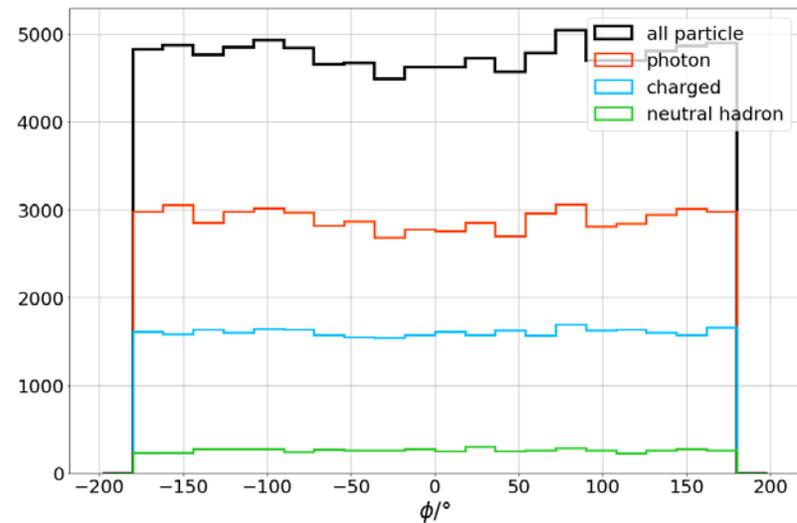
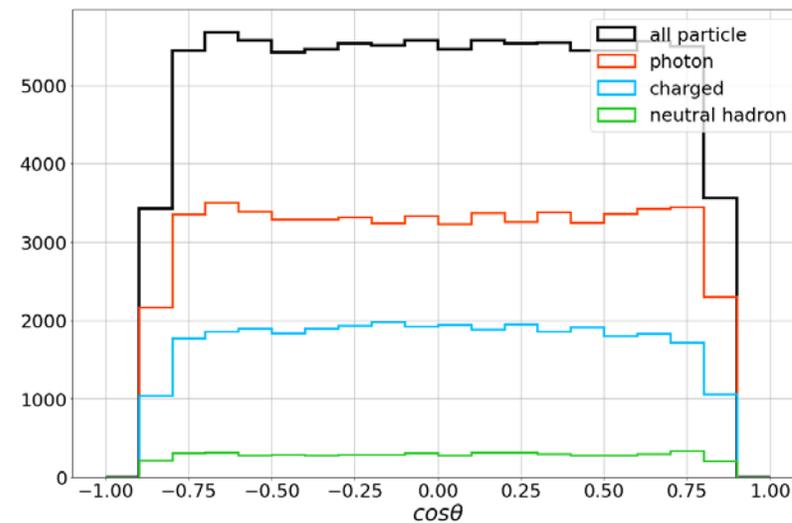
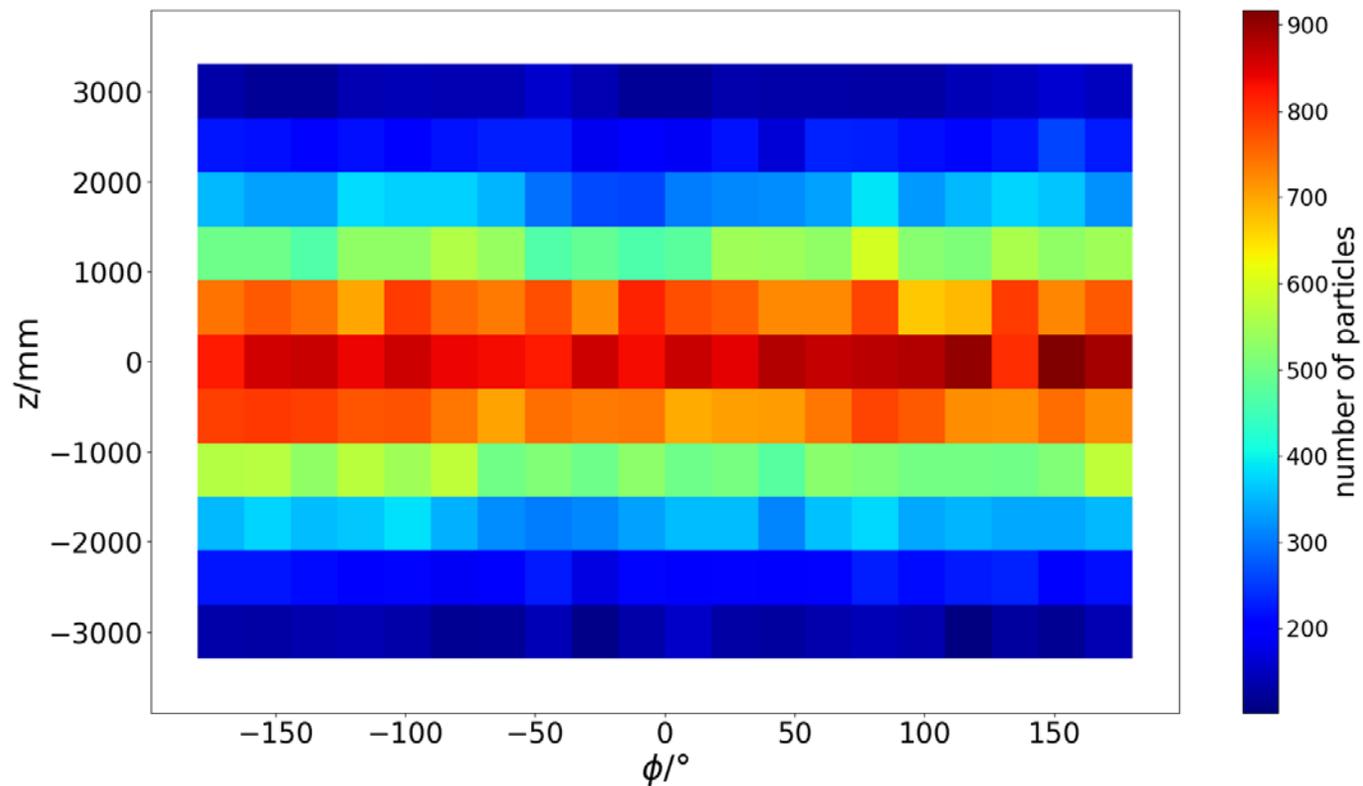


Backup

# 粒子分布

➤ 所有事例中，粒子在量能器的位置分布

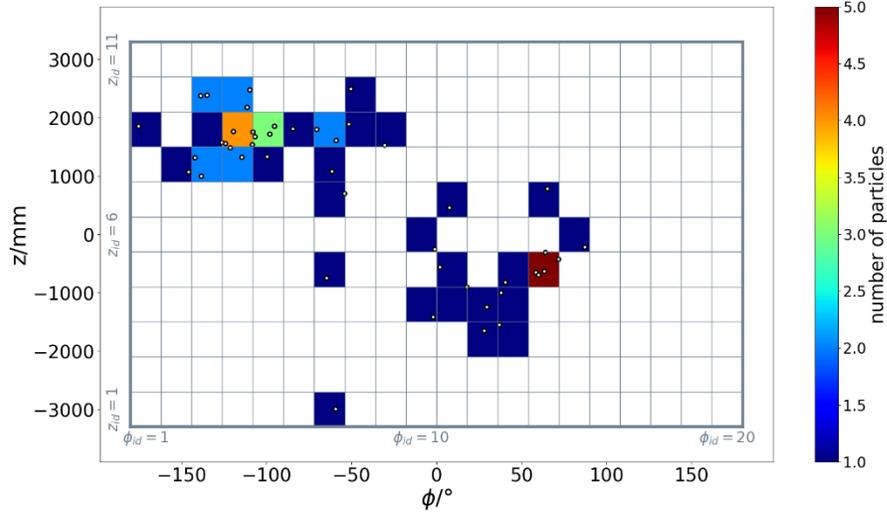
■  $H \rightarrow gg$ , 1994 events



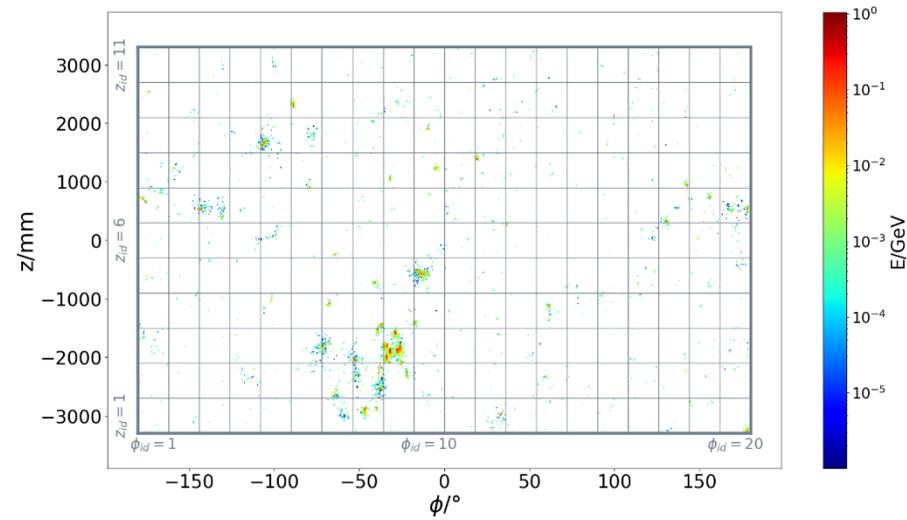
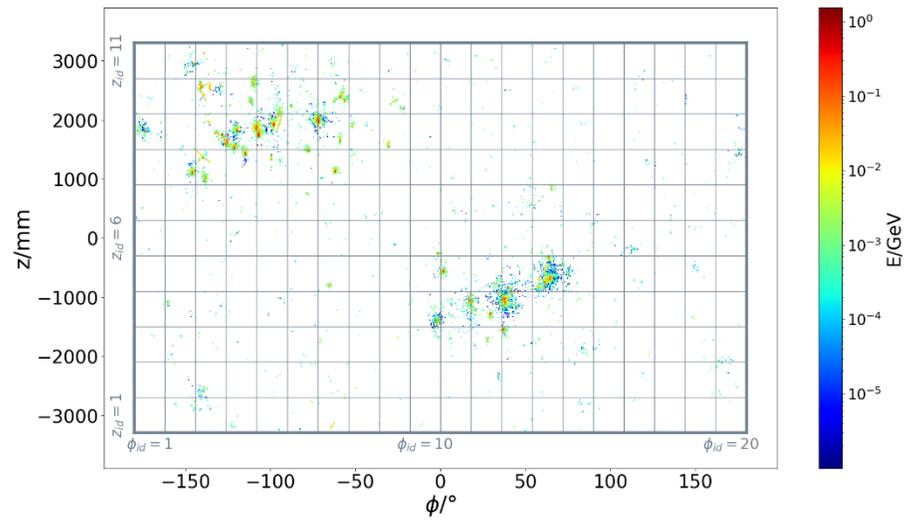
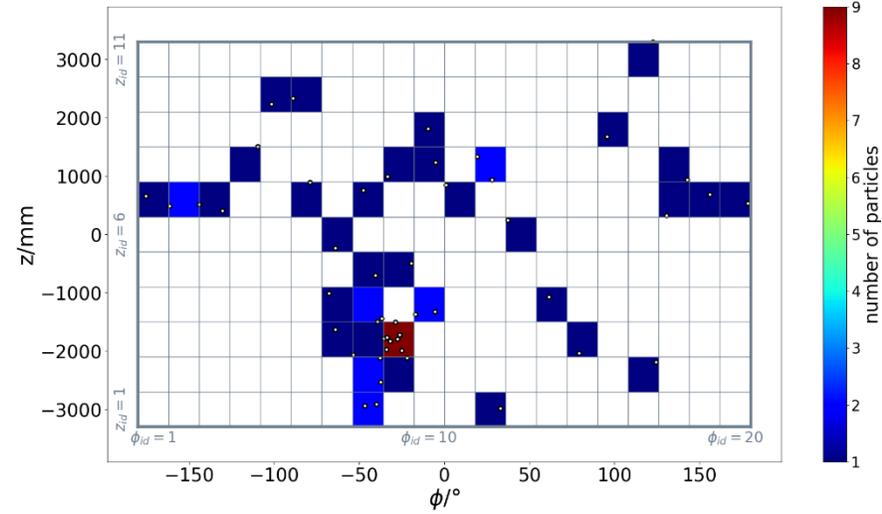
# 事例显示

➤  $e^+e^- \rightarrow \nu\bar{\nu}H, H \rightarrow gg$

event 0



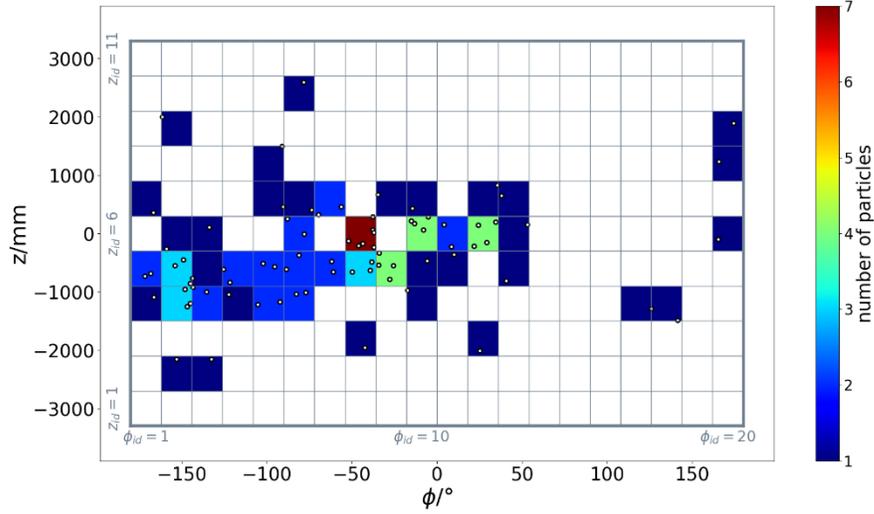
event 1



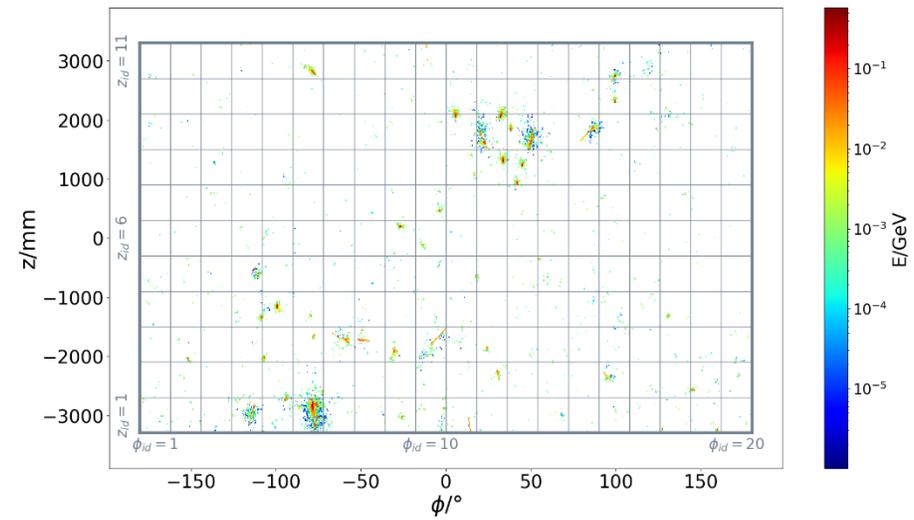
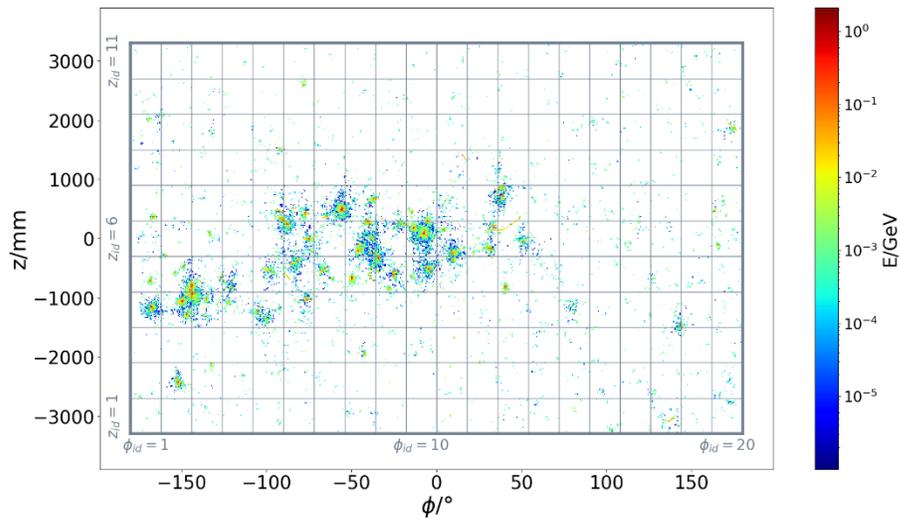
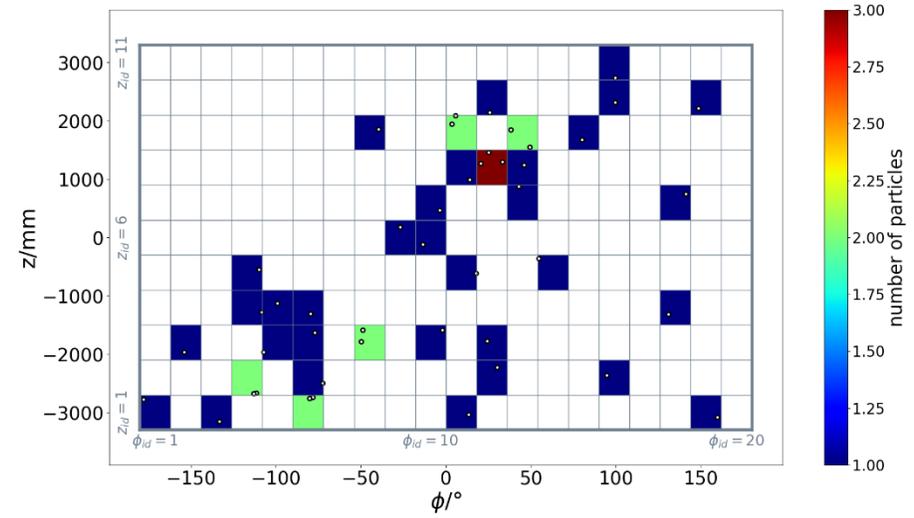
# 事例显示

➤  $e^+e^- \rightarrow \nu\bar{\nu}H, H \rightarrow gg$

event 3

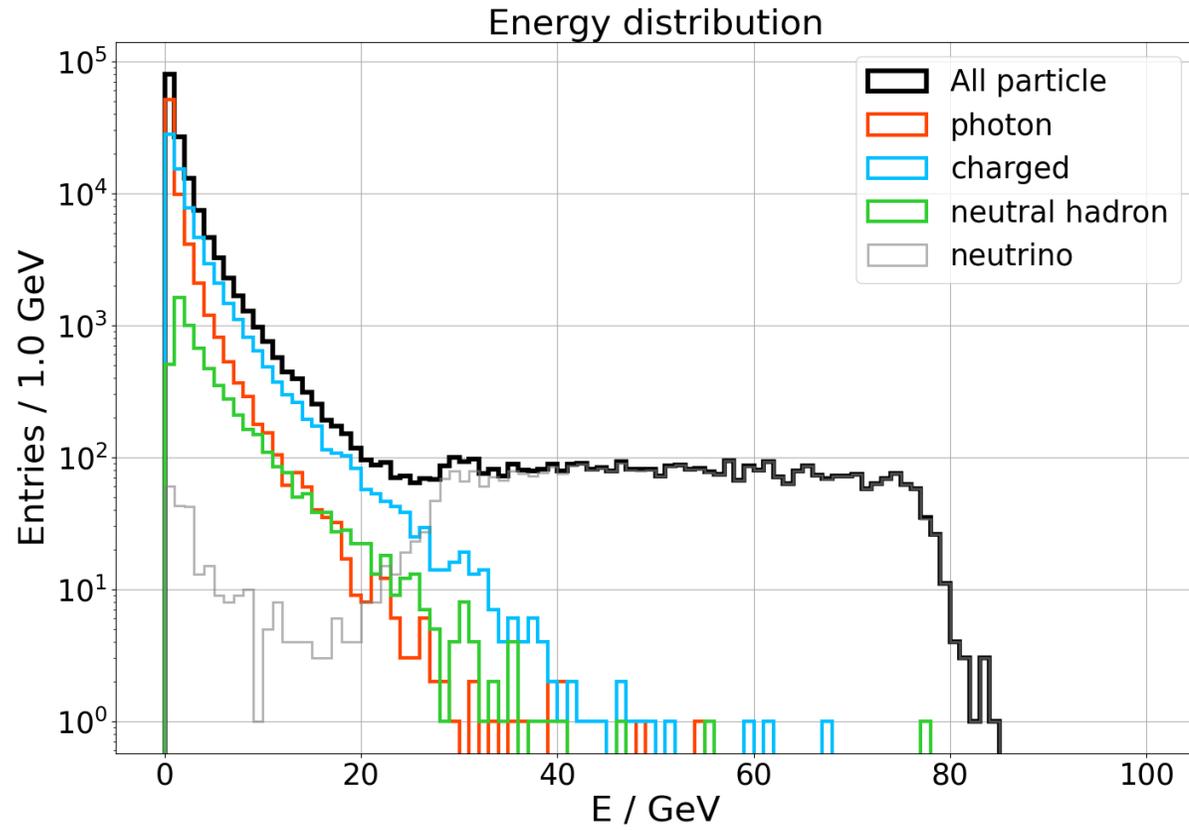


event 4



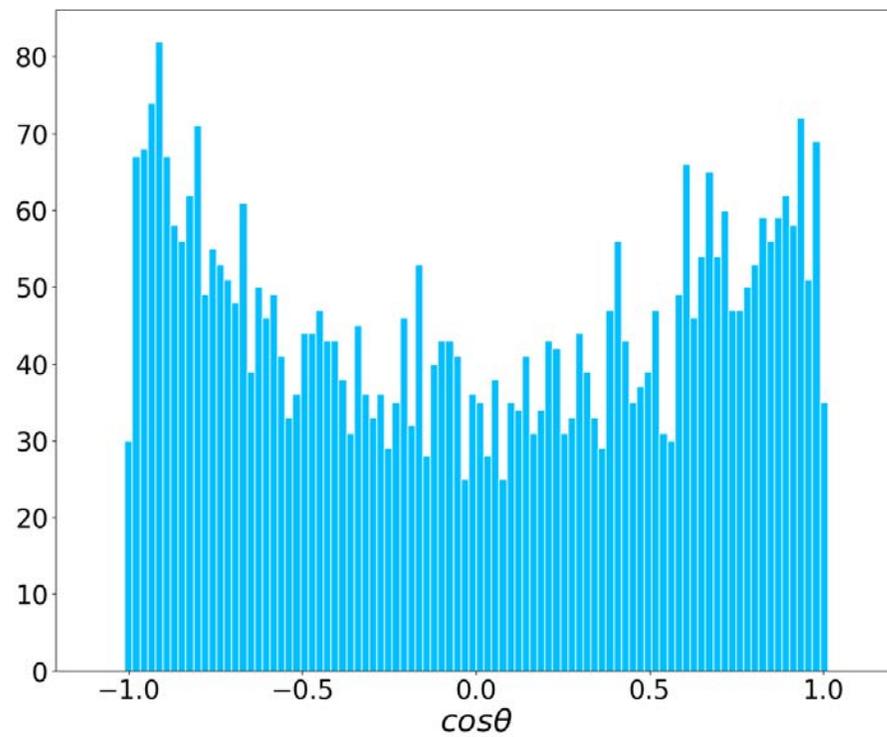
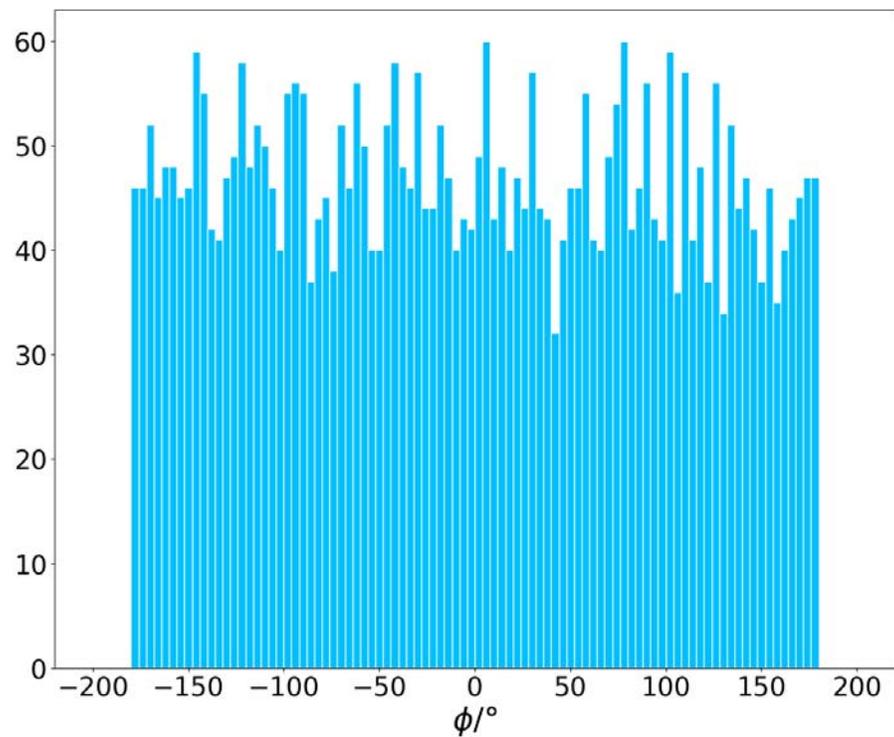
# 能量分布

➤  $H \rightarrow gg$  所有末态粒子



$$H \rightarrow gg$$

➤ 末态中微子动量方向分布



# 所有中性粒子均在桶部的事例

只有20个事例

