## Dimension of PADME variables

Energy $\rightarrow$ MeV
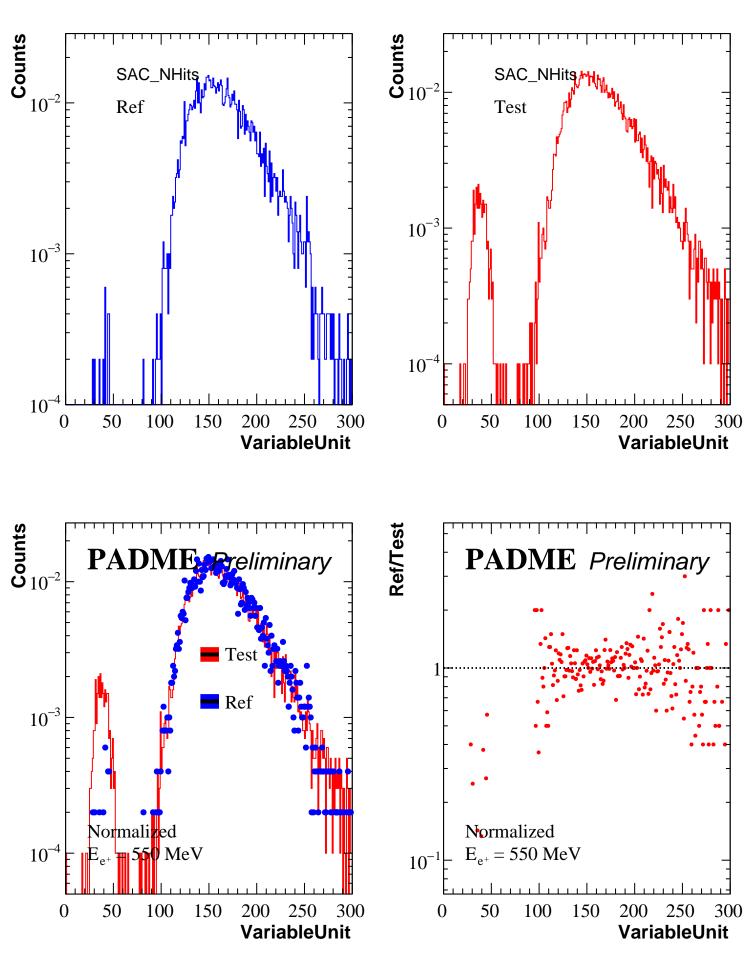
Charge $\rightarrow$ pC
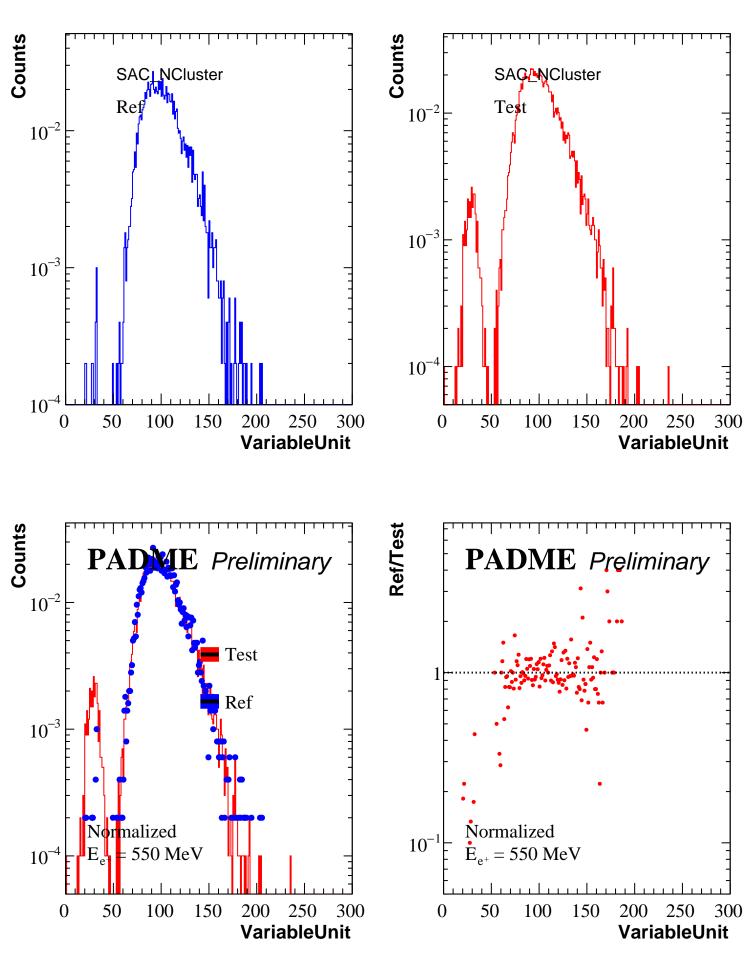
Time $\rightarrow$ ns
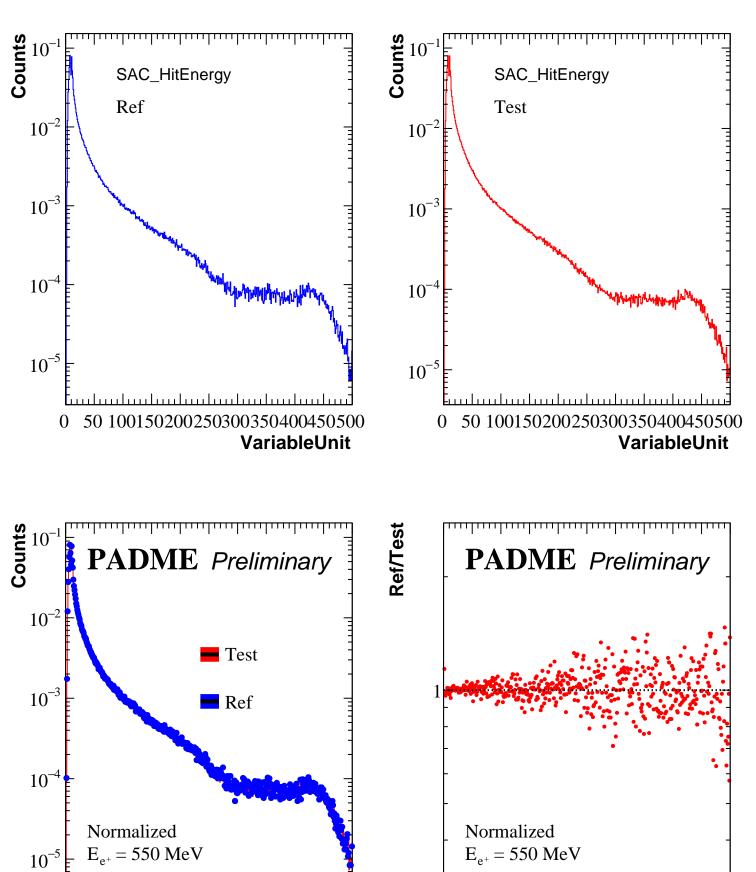
Position $\rightarrow$ mm

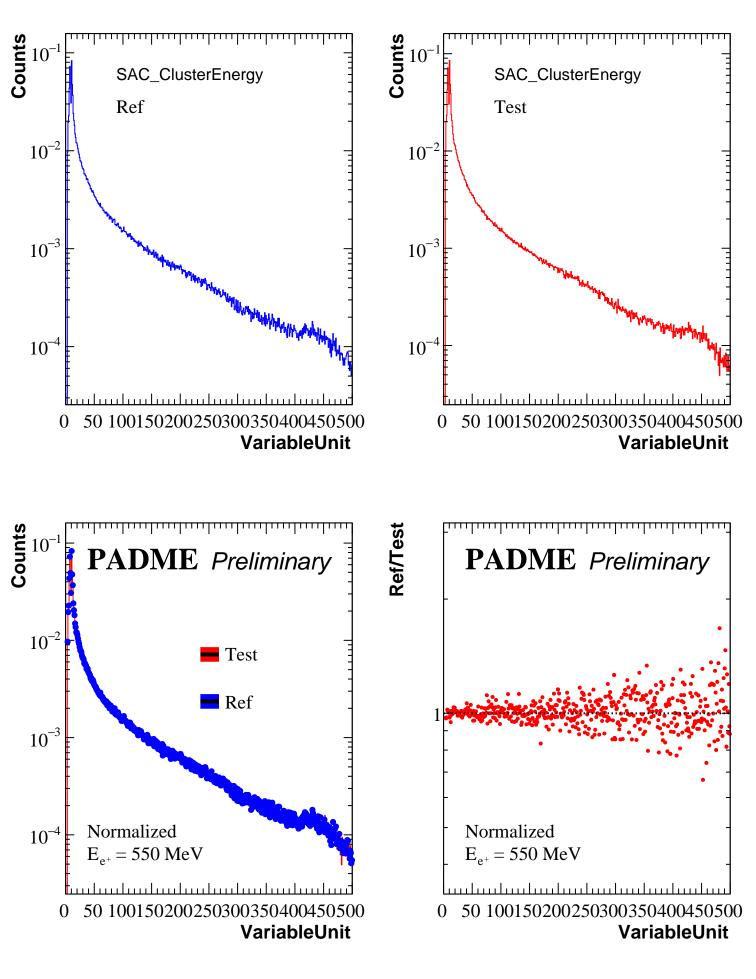Ch Id $\rightarrow$ adimensional

POT $\rightarrow$ adimensional

Top left panel:
**Counts**

SAC_HitXPos

Ref

VariableUnit

Top right panel:
**Counts**

SAC_HitXPos

Test

VariableUnit

Bottom left panel:
**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

Bottom right panel:
**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

## Top left panel

**Counts**

SAC_ClusterXPos

Ref

VariableUnit

## Top right panel

**Counts**

SAC_ClusterXPos

Test

VariableUnit

## Bottom left panel

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized

$E_{e^+} = 550$ MeV

VariableUnit

## Bottom right panel

**Ref/Test**

**PADME** *Preliminary*

Normalized

$E_{e^+} = 550$ MeV

VariableUnit

SAC_HitYPos

Ref

SAC_HitYPos

Test

**PADME** *Preliminary*

Test

Ref

Normalized

$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized

$E_{e^+} = 550$ MeV

**Counts**

SAC_ClusterYPos

Ref

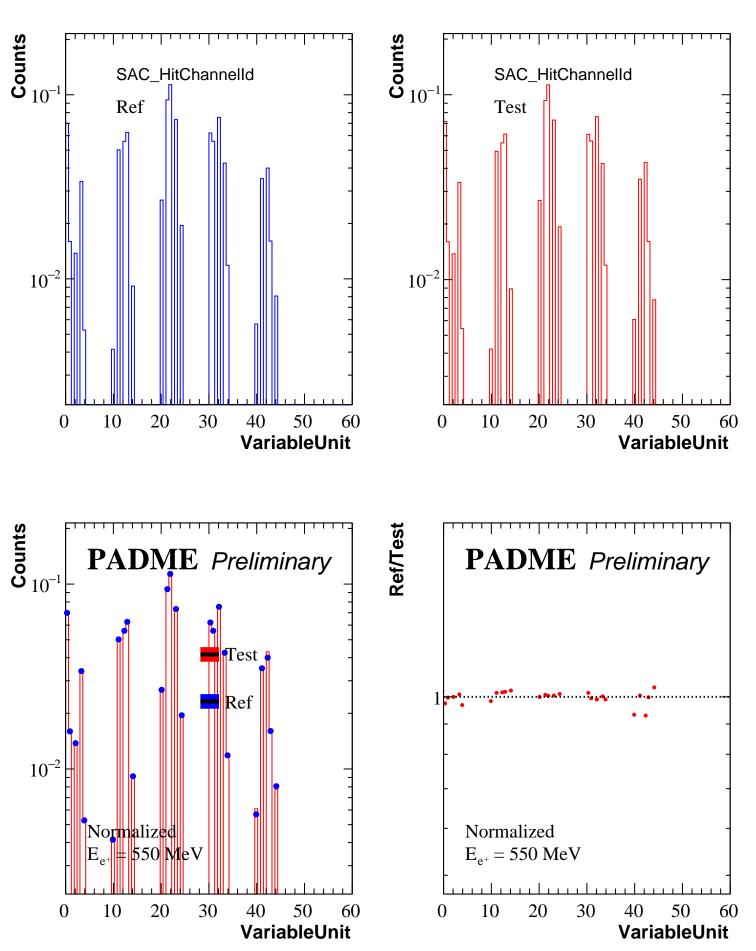VariableUnit

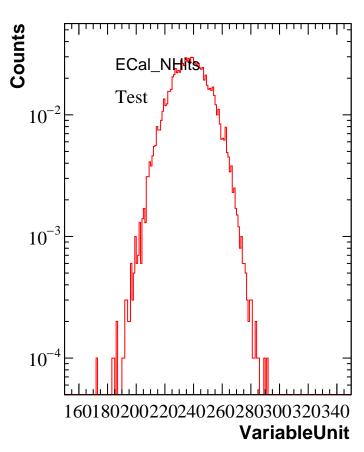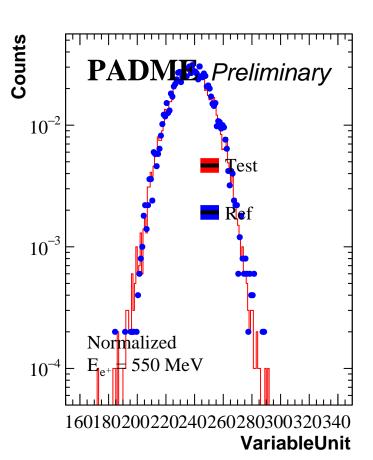**Counts**

SAC_ClusterYPos

Test

VariableUnit

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

## Top-left panel

**Counts**

SAC_HitZPos

Ref

VariableUnit

## Top-right panel

**Counts**

SAC_HitZPos

Test

VariableUnit

## Bottom-left panel

**Counts**

PADME *Preliminary*

■ Test

■ Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

## Bottom-right panel

**Ref/Test**

PADME *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

SAC_ClusterZPos

Ref

SAC_ClusterZPos

Test

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+}$ = 550 MeV

**PADME** *Preliminary*

Normalized
$E_{e^+}$ = 550 MeV

Top-left panel: Counts vs VariableUnit. Label: SAC_ClusterSeedChannelId, Ref

Top-right panel: Counts vs VariableUnit. Label: SAC_ClusterSeedChannelId, Test

Bottom-left panel: Counts vs VariableUnit. **PADME** *Preliminary*. Legend: Test, Ref. Normalized, $E_{e^+} = 550$ MeV

Bottom-right panel: Ref/Test vs VariableUnit. **PADME** *Preliminary*. Normalized, $E_{e^+} = 550$ MeV

**Counts** — ECal_HitEnergy — Ref

**Counts** — ECal_HitEnergy — Test

**PADME** *Preliminary*

Test
Ref

Normalized
$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

**ECal_HitTime**

Ref

**ECal_HitTime**

Test

**PADME** *Preliminary*

Test

Ref

Normalized

$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized

$E_{e^+} = 550$ MeV

**ECal_HitXPos**

Ref

Test

PADME *Preliminary*

Test
Ref

Normalized
$E_{e^+} = 550$ MeV

Normalized
$E_{e^+} = 550$ MeV

ECal_ClusterXPos

Ref

ECal_ClusterXPos

Test

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

**Top left panel:**

ECal_HitYPos

Ref

Counts

VariableUnit

**Top right panel:**

ECal_HitYPos

Test

Counts

VariableUnit

**Bottom left panel:**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

Counts

VariableUnit

**Bottom right panel:**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

Ref/Test

VariableUnit

Top left panel: **Counts** vs **VariableUnit**, ECal_ClusterYPos, Ref

Top right panel: **Counts** vs **VariableUnit**, ECal_ClusterYPos, Test

Bottom left panel: **Counts** vs **VariableUnit**, **PADME** *Preliminary*, Test, Ref, Normalized, $E_{e^+} = 550$ MeV

Bottom right panel: **Ref/Test** vs **VariableUnit**, **PADME** *Preliminary*, Normalized, $E_{e^+} = 550$ MeV

**Top left panel:**
Counts

ECal_ClusterZPos

Ref

VariableUnit

**Top right panel:**
Counts

ECal_ClusterZPos

Test

VariableUnit

**Bottom left panel:**
Counts

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+}$ = 550 MeV

VariableUnit

**Bottom right panel:**
Ref/Test

**PADME** *Preliminary*

Normalized
$E_{e^+}$ = 550 MeV

VariableUnit

**Counts** — TargetBeam_XCentroidError — Ref

**Counts** — TargetBeam_XCentroidError — Test

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+}$ = 550 MeV

**PADME** *Preliminary*

Normalized
$E_{e^+}$ = 550 MeV

**Counts**

TargetBeam_YCentroidError

Ref

$10^{-4}$

$10^{-5}$

$10^{-6}$

$10^{-7}$

−1  −0.5  0  0.5  1  1.5  2

**VariableUnit**

**Counts**

TargetBeam_YCentroidError

Test

$10^{-4}$

$10^{-5}$

$10^{-6}$

$10^{-7}$

−1  −0.5  0  0.5  1  1.5  2

**VariableUnit**

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

$10^{-4}$

$10^{-5}$

$10^{-6}$

$10^{-7}$

−1  −0.5  0  0.5  1  1.5  2

**VariableUnit**

**Ref/Test**

**PADME** *Preliminary*

10

1

$10^{-1}$

$10^{-2}$

Normalized
$E_{e^+} = 550$ MeV

−1  −0.5  0  0.5  1  1.5  2

**VariableUnit**

**TargetBeam_YChargeError**

Ref

Test

**PADME** *Preliminary*

Test
Ref

Normalized
$E_{e^+} = 550$ MeV

TargetBeam_XTime

Ref

TargetBeam_XTime

Test

**PADME** *Preliminary*

Test

Ref

Normalized

$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized

$E_{e^+} = 550$ MeV

**Counts** — TargetBeam_YChi2 — Ref

**VariableUnit**

**Counts** — TargetBeam_YChi2 — Test

**VariableUnit**

**Counts**

**PADME** *Preliminary*

Test
Ref

Normalized
$E_{e^+}$ = 550 MeV

**VariableUnit**

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+}$ = 550 MeV

**VariableUnit**

Top left panel: Counts vs VariableUnit. Labels: PVeto_HitEnergy, Ref

Top right panel: Counts vs VariableUnit. Labels: PVeto_HitEnergy, Test

Bottom left panel: Counts vs VariableUnit. Labels: **PADME** *Preliminary*, Test, Ref, Normalized, $E_{e^+} = 550$ MeV

Bottom right panel: Ref/Test vs VariableUnit. Labels: **PADME** *Preliminary*, Normalized, $E_{e^+} = 550$ MeV

**Counts**

PVeto_HitTime

Ref

VariableUnit

**Counts**

PVeto_HitTime

Test

VariableUnit

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

Top left panel:

**Counts**

PVeto_ClusterYPos

Ref

**VariableUnit**

Top right panel:

**Counts**

PVeto_ClusterYPos

Test

**VariableUnit**

Bottom left panel:

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

**VariableUnit**

Bottom right panel:

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

**VariableUnit**

**Counts**

PVeto_ClusterZPos

Ref

**VariableUnit**

**Counts**

PVeto_ClusterZPos

Test

**VariableUnit**

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

**VariableUnit**

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

**VariableUnit**

Top-left panel: Counts vs VariableUnit. Label: "PVeto_ClusterSeedChannelId", "Ref" (blue histogram).

Top-right panel: Counts vs VariableUnit. Label: "PVeto_ClusterSeedChannelId", "Test" (red histogram).

Bottom-left panel: Counts vs VariableUnit. **PADME** *Preliminary*. Legend: Test, Ref. Normalized, $E_{e^+} = 550$ MeV.

Bottom-right panel: Ref/Test vs VariableUnit. **PADME** *Preliminary*. Normalized, $E_{e^+} = 550$ MeV.

EVeto_ClusterEnergy

Ref

EVeto_ClusterEnergy

Test

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

**Counts**

EVeto_HitYPos

Ref

VariableUnit

**Counts**

EVeto_HitYPos

Test

VariableUnit

**Counts**

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

**Ref/Test**

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

EVeto_ClusterYPos
Ref

EVeto_ClusterYPos
Test

**PADME** *Preliminary*

Test
Ref

Normalized
$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

EVeto_ClusterSeedChannelId

Ref

EVeto_ClusterSeedChannelId

Test

**PADME** *Preliminary*

Test

Ref

Normalized

$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized

$E_{e^+} = 550$ MeV

Counts

HEPVeto_HitEnergy

Ref

VariableUnit

Counts

HEPVeto_HitEnergy

Test

VariableUnit

Counts

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

Ref/Test

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

VariableUnit

**Counts**

$10^{-1}$

$10^{-2}$

$10^{-3}$

$10^{-4}$

$10^{-5}$

HEPVeto_HitTime

Ref

−400 −300 −200 −100 0 100 200 300 400

**VariableUnit**

**Counts**

$10^{-1}$

$10^{-2}$

$10^{-3}$

$10^{-4}$

$10^{-5}$

HEPVeto_HitTime

Test

−400 −300 −200 −100 0 100 200 300 400

**VariableUnit**

**Counts**

$10^{-1}$

$10^{-2}$

$10^{-3}$

$10^{-4}$

$10^{-5}$

**PADME** *Preliminary*

Test

Ref

Normalized
$E_{e^+} = 550$ MeV

−400 −300 −200 −100 0 100 200 300 400

**VariableUnit**

**Ref/Test**

10

1

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV

−400 −300 −200 −100 0 100 200 300 400

**VariableUnit**

**HEPVeto_HitZPos**
Ref

**HEPVeto_HitZPos**
Test

**PADME** *Preliminary*

Test
Ref

Normalized
$E_{e^+} = 550$ MeV

**PADME** *Preliminary*

Normalized
$E_{e^+} = 550$ MeV