

Here, we will loop over the PVs. Use a Stripped DiMuon stream DST from the Bookkeeping as input. Use `scripts/minimal.py` as a starting point to

1. Plot the beam profile in X, Y and Z.
2. Make a 2D plot of the beam in XZ and YZ. Do these look the same?
3. What is the size of the beam in Z and in 3D?

First book some histograms for the variables you are interested in. Add this to the configuration to write the histograms to a ROOT file:

```
dv.HistogramFile = 'histos.root'
```

Look at the contents of `HistoUtils` and book the histograms you need.

```
help(HistoUtils)
histo = HistoUtils.book(...)
```

In the event loop get the vertices from location `'/Event/Rec/Vertex/Primary'`

```
location = '/Event/Rec/Vertex/Primary'
vertices = evtSvc[location]
```

Test if this event has some vertices

```
if not vertices or vertices.size() == 0:
    continue
```

Loop over the vertices and fill the histograms:

```
for v in vertices:
    histo.fill(v.position().X())
```

-- RoelAaij - 26-Sep-2011

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