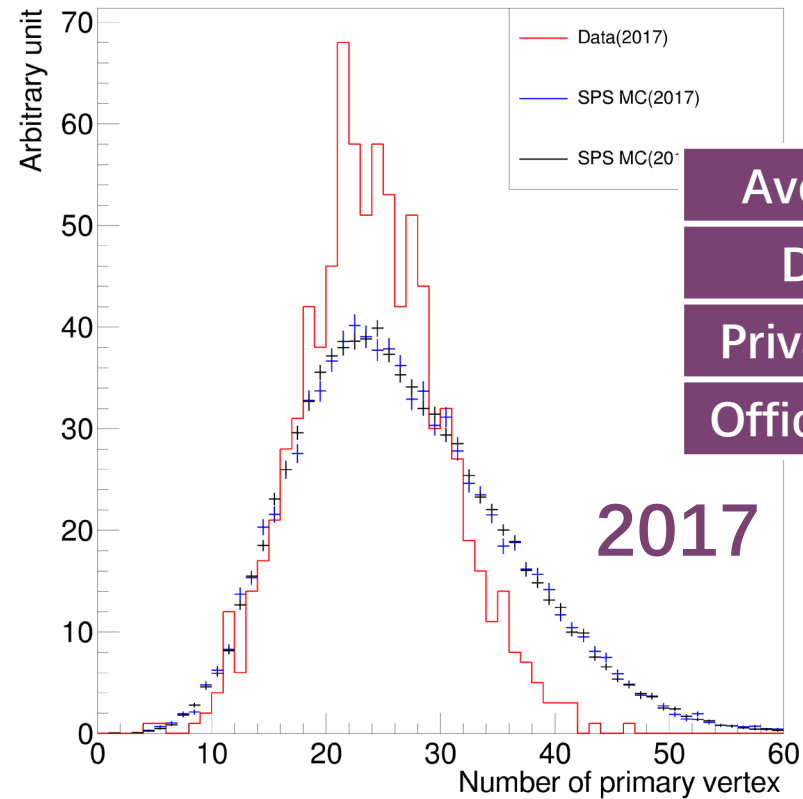
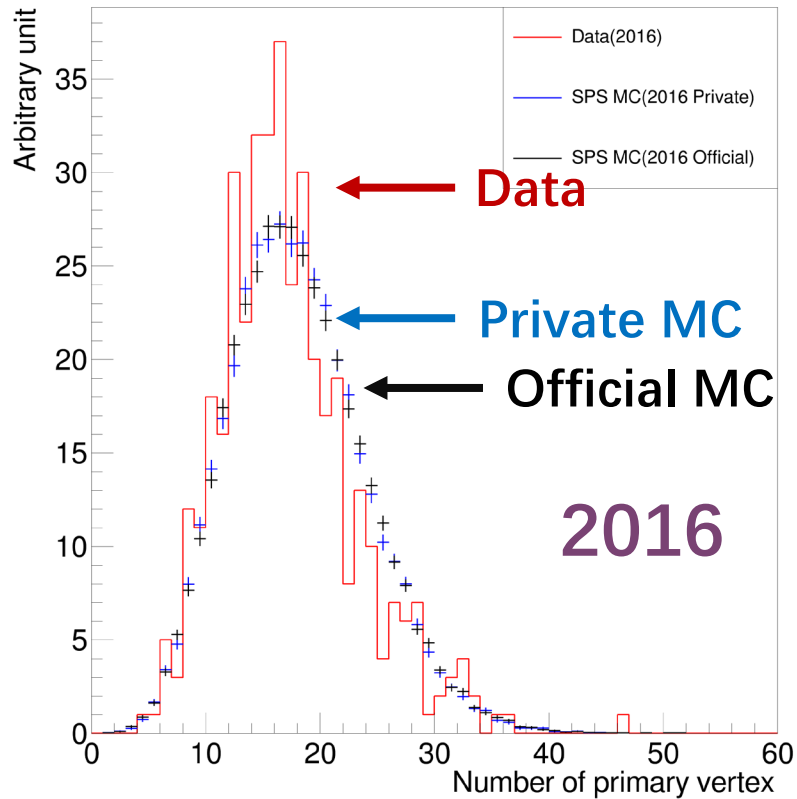




Primary vertex

- The number of primary vertexes is checked:
 - With requirement: four muon fit pass, $p^T(\mu) > 3.5$, $|\eta(\mu)| < 2.4$



Average	2016	2017
Data	16.7	23.6
Private MC	17.6	26.3
Official MC	17.6	26.2



Primary vertex

- The information of the primary vertex can't be correctly extracted

```
edm::Handle<reco::VertexCollection> primaryVertices_handle;
iEvent.getByToken(primaryVertices_Label, primaryVertices_handle);
...
thePrimaryV = reco::Vertex(*(primaryVertices_handle->begin()));
...
```

- All the objects in this event will be assigned to the first PV of this event