Tutorial of Event Display (SERENA)

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Outline

- Quick Start
- View Control
- GUI and Display Setting

Quick Start

A quick tutorial

Script to run the tutorial

\$JUNOTOP/offline/Examples/Tutorial/share/tut_vis.sh
A script to run the chain job of simulation-calibration-reconstruction-eventdisplay

Command to run event display in offline

\$ serena.exe

Quick Start

Input the data

Command to run event display in offline

\$ serena.exe

Files needed to run SERENA

sample_detsim.root for geometry and simulation

sample_calib.root for calibration
sample_rec.root for reconstruction (optional)
sample_detsim_user.root for optical photon path (optional)

Argument to use self- defined directory

<pre>geom =sample_detsim.root</pre>
<pre>sim =sample_detsim.root</pre>
<pre>calib=sample_calib.root</pre>
<pre>rec =sample_rec.root</pre>
<pre>simus=sample_detsim_user_op.root</pre>

View Control

Control the Camera

Hold mouse left key and then drag.



View Control

Control the Camera

Hold mouse right key and then drag

or use the mouse scroll to zoom in/out



View Control

Control the Camera

Hold mouse middle key and then drag to shift the







Things on the left

Component Control

Switch of each part in the 3d space

Component Property

Property corresponding to the selected objects in the Component Control windows



Things on the right



Event Control Input the event number or click the button can change the displayed event

Distribution

Change shows the distribution of nPE of each PMT. **Time** shows the first hit time of each PMT.

Animation

Tcut is the showing time when animating. Tstep is the total time of animation. Time windows can be modified.

Home can be used to reset camera view.Max will set the camera to perspective view.Inner moves the camera into the acrylic ball.

Things on the right



Ray Mode Line connecting PMTs and the rec point **Cone Mode** Cone covering the hits-dense area

Find the rec point



Vertexes Comparison

Zoom in to find the reconstruction point, deposition point and initial point. **Red** line is the distance from the initial point to the

deposition point.

Blue line shows the different between edep and rec.

Extra module



Viewer's option

Including the light source, rotation center, axes, clipping and so on.

Double clicking in free space can open this windows.

Output module In the Extras tab, a auto rot

In the Extras tab, a auto rotation can be set up. And users can output the movement as gif image.

Optical Photon Path

Get photon tracks in event display

Add argument in the tut_detsim.py

Add --anamgr-photon-tracking for tut_detsim.py Add a soft link sample_detsim_user_op.root to sample_detsim_user.root

python tut_detsim.py ---anamgr-photon-tracking

ln -sf sample_detsim_user.root sample_detsim_user_op.root

Run the serena.exe



Thank you.