

I3File Tools and Visualization

Kevin Meagher

5 June 2024

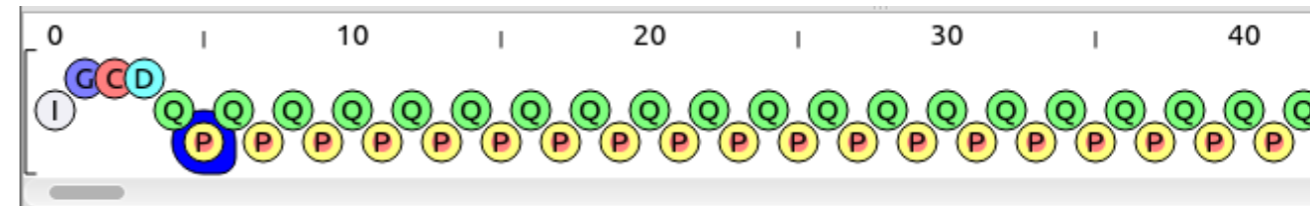
IceCube Summer School



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

Different types of frames

Frames are Identified by a letter



Metadata (usually once per file)

- “I” (TrayInfo): Information on how the file was previously processed
- “G” (Geometry): Geometric coordinates of each DOM
- “C” (Calibration): Calibration constants relating to the photomultiplier tubes
- “D” (Detector Status): How the data acquisition system was configured for this particular (8 hour) run. Ie which DOMs were on.

Event Info: (~10 us of data)

- “Q” (DAQ): Waveforms recorded for this event
- “P” (Physics): High level pulse information and reconstructions

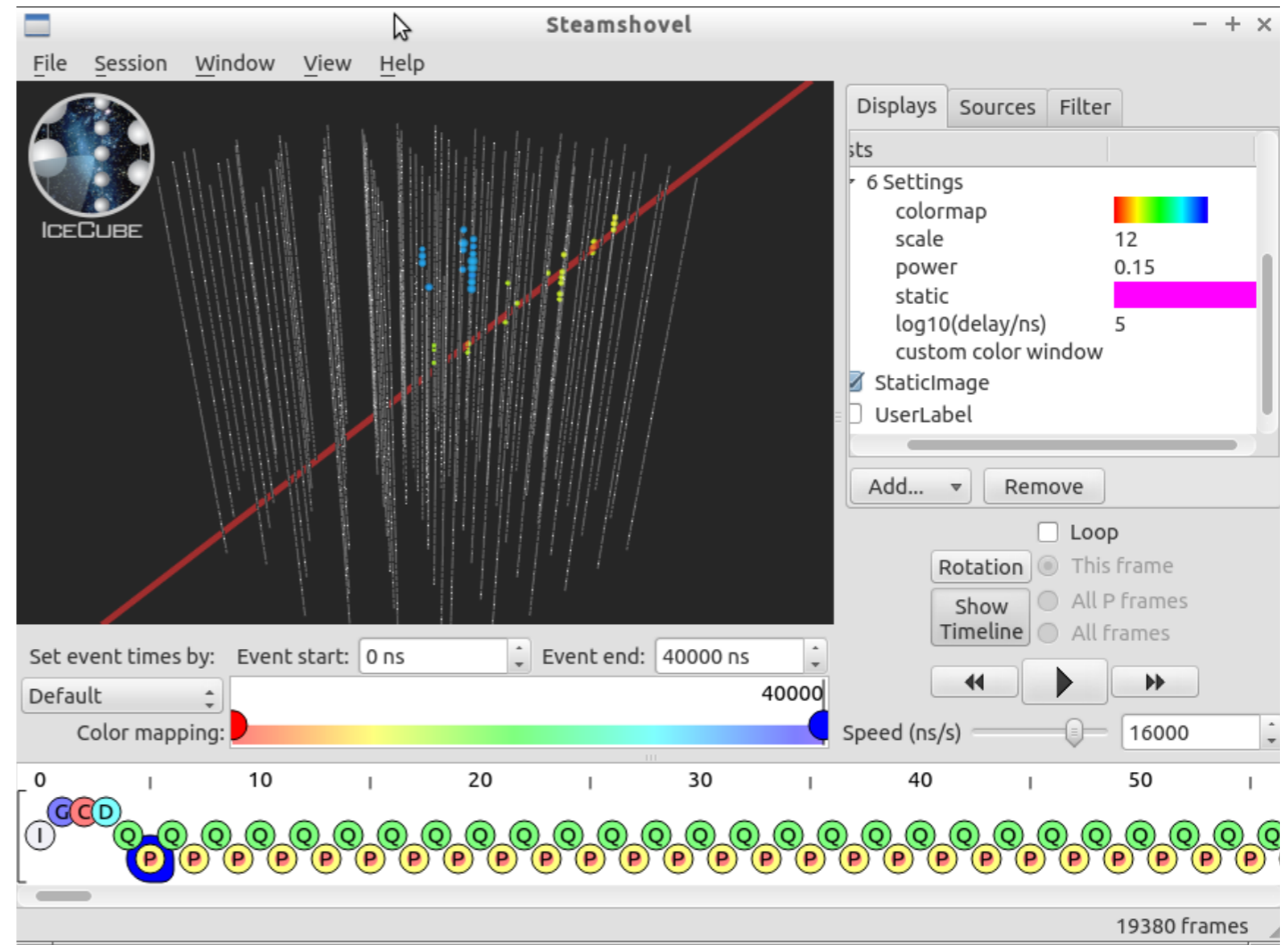
Useful commands In dataio-shovel

- “x”: open a module in XML format
- “enter”: open an object in a cleaned human readable format
- “g”: goto a frame number
- “i”: enter an python shell
- “L”: import a library
- “?”: show all available commands

dataio-shovel Demo

Steamshovel

Tool for 3D visualization of IceCube events in a GUI



To Use

1. First enter the IceTray environment:

On the VM: `~/i3_software/combo/build/env-shell.sh`

2. For a file in .i3 format

on the VM: `steamshovel GCD-File.i3[.zst] Data.i3[.zst]`

steamshovel documentation:

<https://docs.icecube.aq/icetray/main/projects/steamshovel/index.html>

Steamshovel Demo

Don't Suffer in silence, if you have any problems with Steamshovel or dataio-shovel do one of the following thing:

- File a issue on GitHub: <https://github.com/icecube/icetray/issues>
- Ask on #Software on Slack
- Send an email to software@icecube.wisc.edu