Interferometric Magic Display

`http://www.hep.ucl.ac.uk/~strutt/`
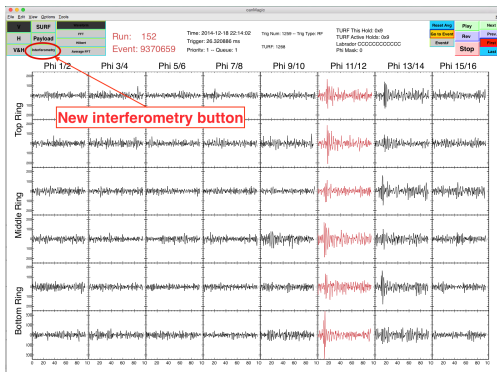`InterferometryMagicDisplay/demo.gif`

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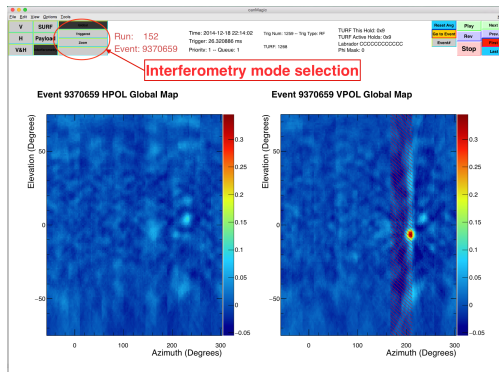University College London

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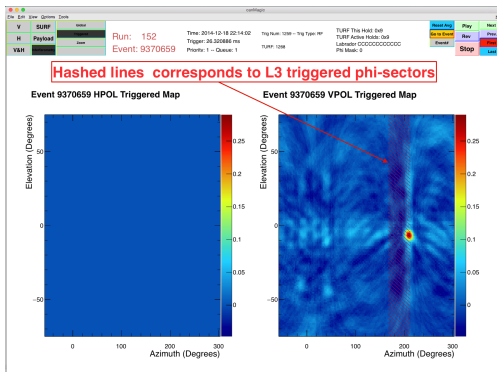- An extension to the functionality of MagicDisplay.
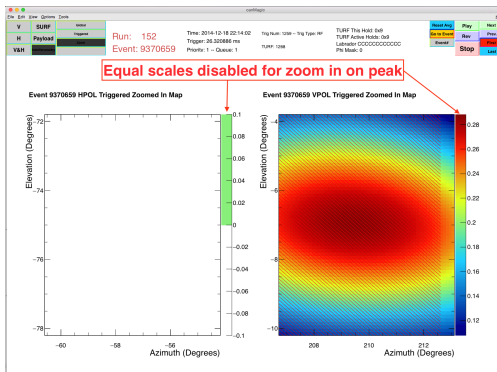
Interferometric Magic Display

- Three interferometry modes: "Global", "Triggered" and "Zoom".
  - Global: Each channel cross correlated with all others in ± 2 ϕ-sectors.

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- Three interferometry modes: "Global", "Triggered" and "Zoom".
  - Triggered: All channels within ± 2 ϕ-sectors of an L3trigger correlated included in reconstruction.

Interferometric Magic Display

- Three interferometry modes: "Global", "Triggered" and "Zoom".
  - Zoom: All channels within ± 2 ϕ-sectors of an L3trigger correlated included in reconstruction after waveform upsampling to $\sim$ 1ps.

Prerequisites

Unfortunately the list is a little longer than before

1. ROOT: `https://root.cern.ch/`
2. fftw3: `http://www.fftw.org/`
3. libRootFftwWrapper: `https://delos.mps.ohio-state.edu/anitaGround/libRootFftwWrapper/trunk/`
4. EventReader: `https://delos.mps.ohio-state.edu/anitaGround/eventReaderRoot/trunk/`
5. EventCorrelator: `https://delos.mps.ohio-state.edu/anitaGround/eventCorrelator/trunk/`
6. BensAnitaAnalysisTools: `https://delos.mps.ohio-state.edu/anitaGround/strutt/BensAnita3AnalysisTools`

Prerequisites

- ROOT and fftw have install instructions on their website.
- Install instructions for the usual ANITA libraries (items 3-5) are at `http://www.hep.ucl.ac.uk/uhen/anita/`
  - At the present time the documentation says everything is for ANITA-2 but the install instructions are the same.
  - If in doubt get the most recent version of everything from the SVN.
- Prerequisites for BensAnitaAnalysisTools are the things listed above it (items 1-5) on slide 6.
- The install instructions for my library are basically the same as the others:
  - Requires ANITA_UTIL_INSTALL_DIR environment variable to be set and installs the headers and libraries along with all the other ANITA packages.

```
# Apologies for the tiny font to get the svn command onto one line
svn co https://delos.mps.ohio-state.edu/anitaGround/strutt/BensAnita3AnalysisTools BensAnitaTools
cd BensAnitaTools
make clean all install
```

It doesn't work! What should I do!?

- I've tested this on a mac with clang and ROOT-6.04 and on the UCL HEP machines running SL6 with gcc and ROOT-5.34 but that's hardly exhaustive.
- Send me an email with your MagicDisplay issues, preferably with some output of the crash or install problem.
- But if you need things to work ASAP and only want to look at the waveforms then roll back to the previous ANITA-3 version.

```
cd YourMagicDisplayDirectory
# Version 3108 was prior to interferometry
svn update -r3108
make clean all install
```