

PyDM Archive Viewer

Zach Domke

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U.S. DEPARTMENT OF
ENERGY

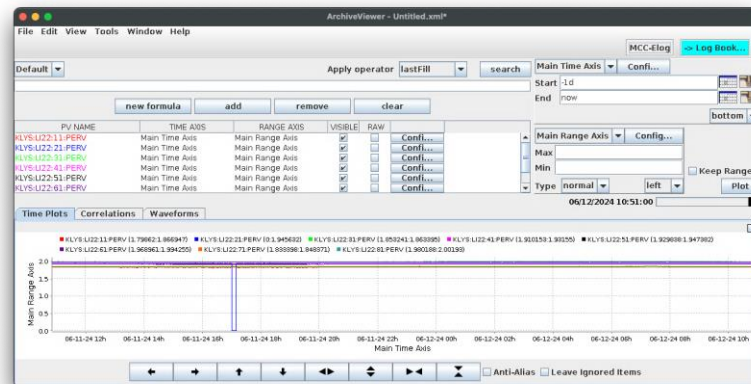
Stanford
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ACCELERATOR
LABORATORY

Why Upgrade from the Current Archive Viewer?

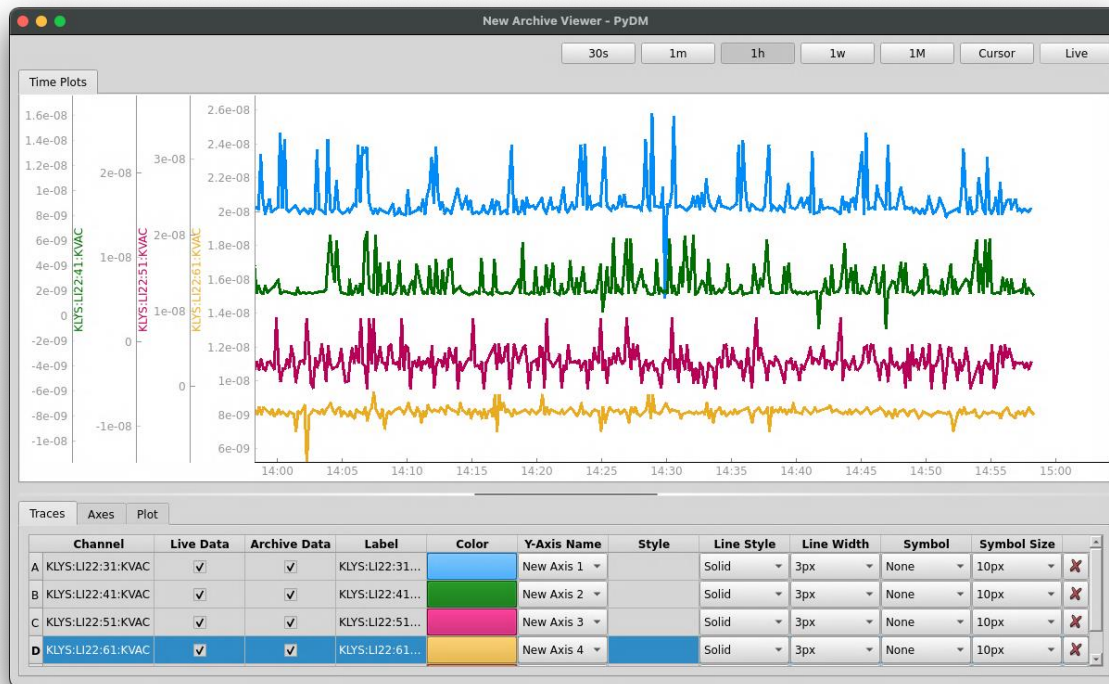
- Migrate Java-based applications to PyDM
- Developed in 2005 at SNS
- No longer maintained
- New functionality needed



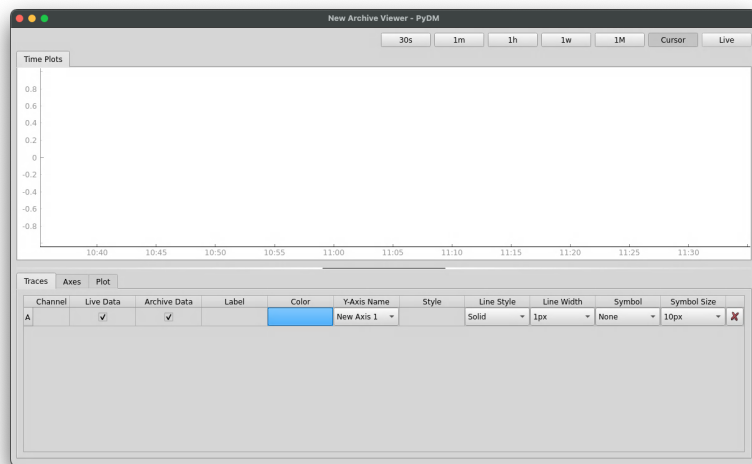
PyDM-based Archive Viewer

Startup script location:

```
$PHYSICS_TOP/PyDMArchiveViewer/launch_archive_viewer.bash
```



PyDM-based Archive Viewer



Release: R0.2.0

2 Main sections:

- Plot
- Controls & Settings
- Resizable (& collapsable)

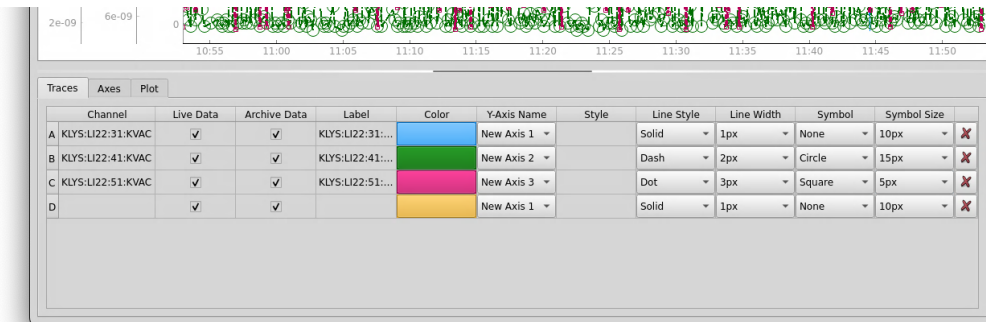
Controls & Settings – Traces

The screenshot shows the 'New Archive Viewer - PyDM' window. At the top, there are time scale buttons: 30s, 1m, 1h, 1w, 1M, Cursor, and Live. Below these is a 'Time Plots' section with a graph area. The y-axis ranges from -0.6 to 0.8, and the x-axis shows time from 10:40 to 11:30. Below the graph is a 'Traces' section with a table. A red box highlights the table area.

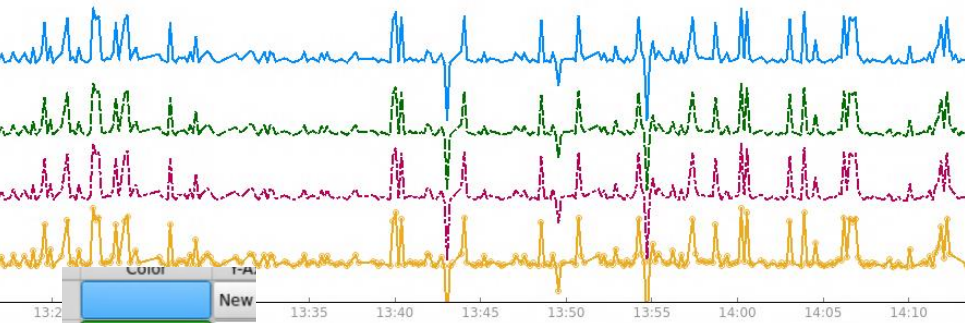
Channel	Live Data	Archive Data	Label	Color	Y-Axis Name	Style	Line Style	Line Width	Symbol	Symbol Size	
A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			New Axis 1		Solid	1px	None	10px	X

Customizing Traces

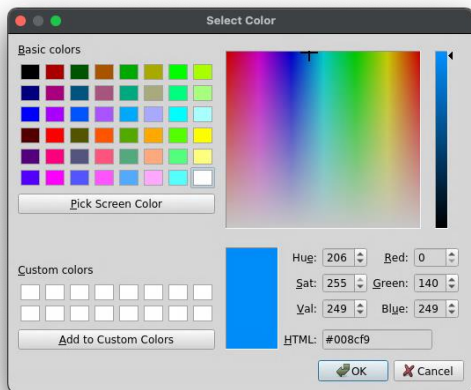
- Create new traces by entering a Channel
- Link to different axes
- Customize appearance
 - Color
 - Line style & width
 - Symbol type & size
- Fetch live/archive data



Trace Appearance Options

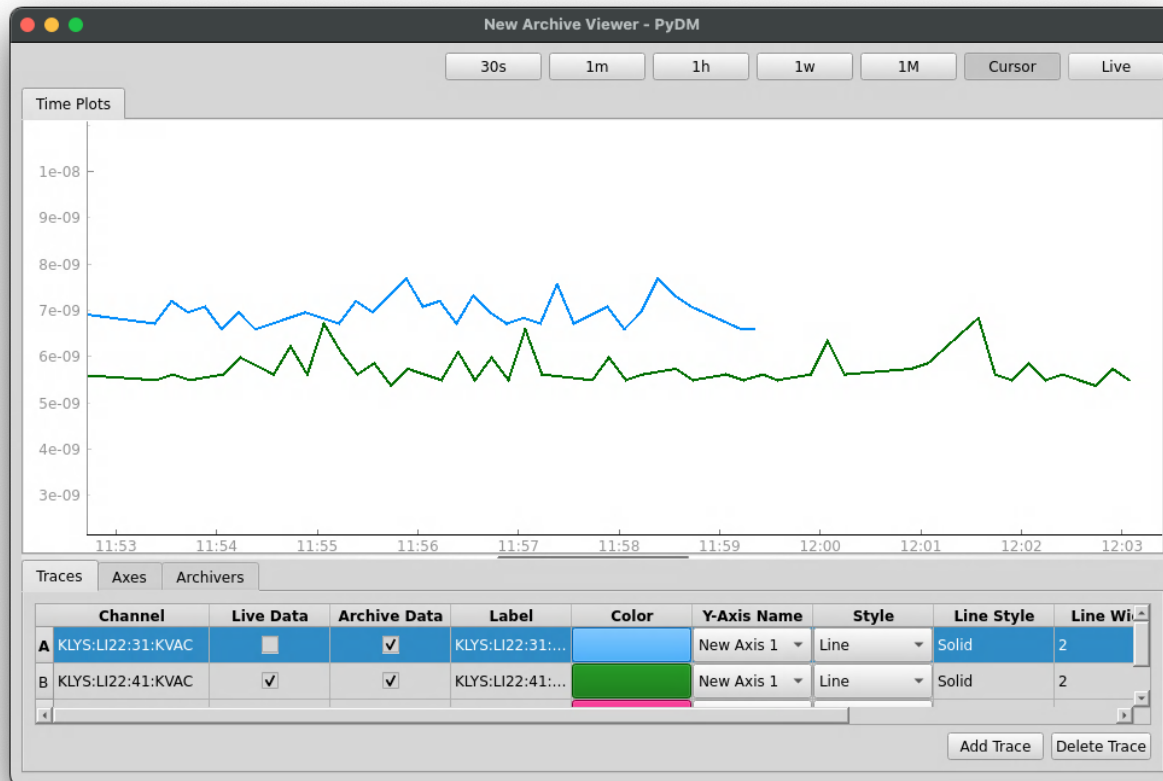


Color	Trace
Blue	New
Green	New
Magenta	New
Yellow	New
Orange	New
Light Orange	New
Light Purple	New
Cyan	New
Olive	New
Teal	New
Pink	New
Light Blue	New



- Color
 - Default set
 - PyQt Color Picker
- Line styles
 - Solid, dashed, dotted, ...
- Symbols
 - Circle, square, triangle, star, pentagon, hexagon, x, diamond, plus, or None

Pause Live Data Fetching



Controls & Settings – Axes

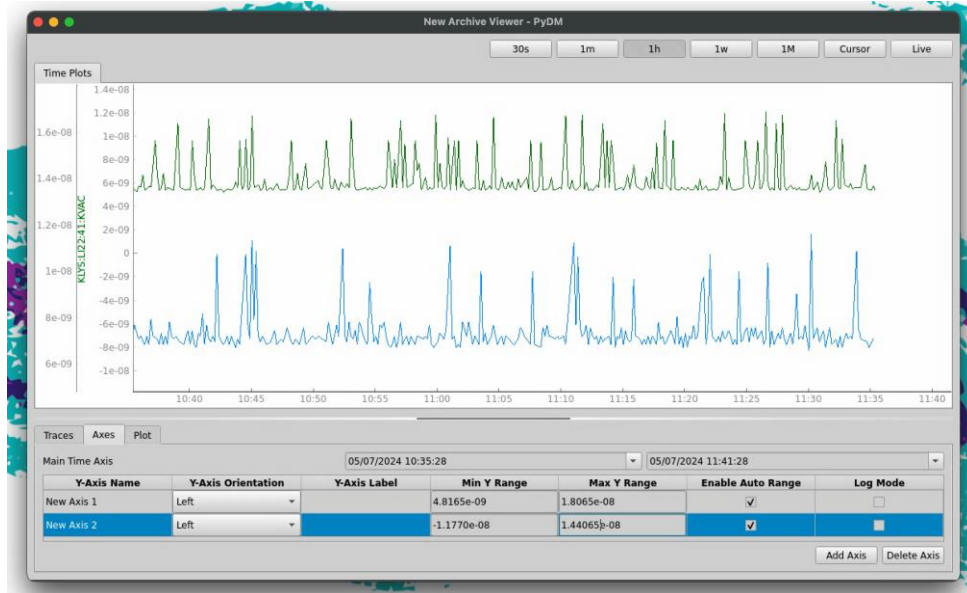
The screenshot shows the 'New Archive Viewer - PyDM' window. At the top, there are time scale buttons: 30s, 1m, 1h, 1w, 1M, Cursor, and Live. Below these is a 'Time Plots' tab and a plot area. The y-axis ranges from -0.6 to 0.8, and the x-axis shows time from 14:10 to 15:05. Below the plot is a control panel with 'Traces', 'Axes', and 'Plot' tabs. The 'Axes' tab is active, showing a 'Main Time Axis' with two dropdown menus for time ranges. Below this is a table for axis settings:

Y-Axis Name	Y-Axis Orientation	Y-Axis Label	Min Y Range	Max Y Range	Enable Auto Range	Log Mode	
New Axis 1	Left		-1.04	1.04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="X"/>

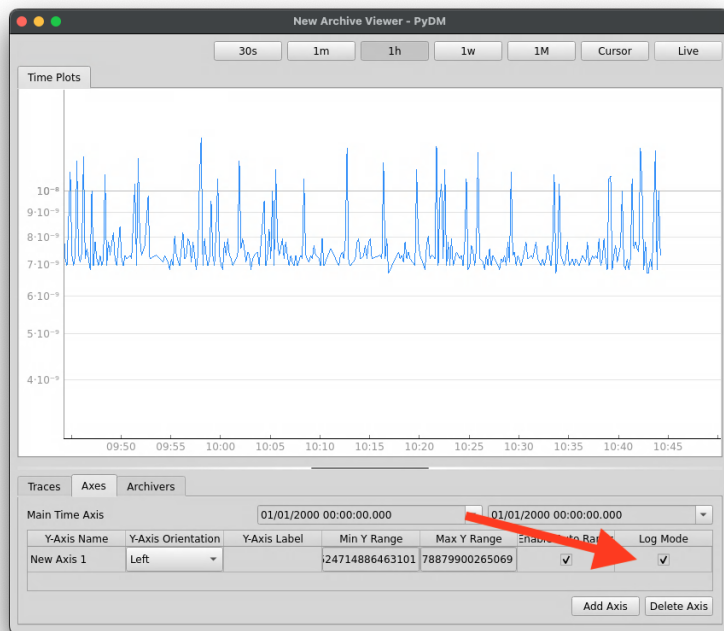
At the bottom right of the 'Axes' panel is an 'Add Axis' button.

X-Axis Controls

- The datetime values are updated to reflect changes to the x-axis
- Changing the datetime values updates the x-axis' range

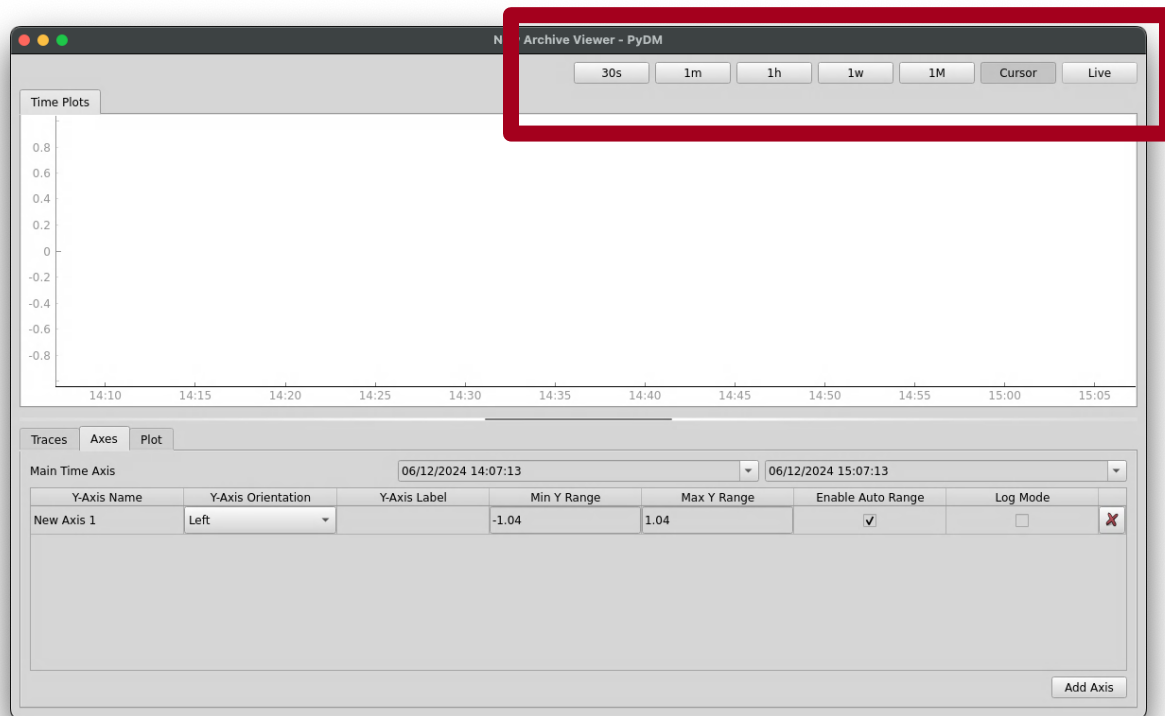


Y-Axis Properties

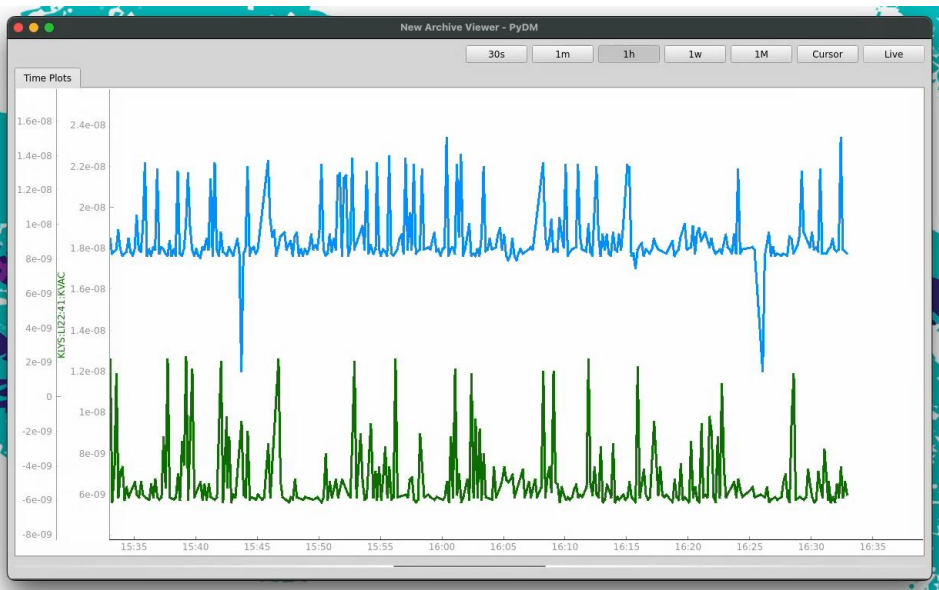


- The plot will update to show user changes to Axis properties
 - Orientation
 - Log mode
 - Range

Standard Time Range Buttons



Standard Time Range Buttons

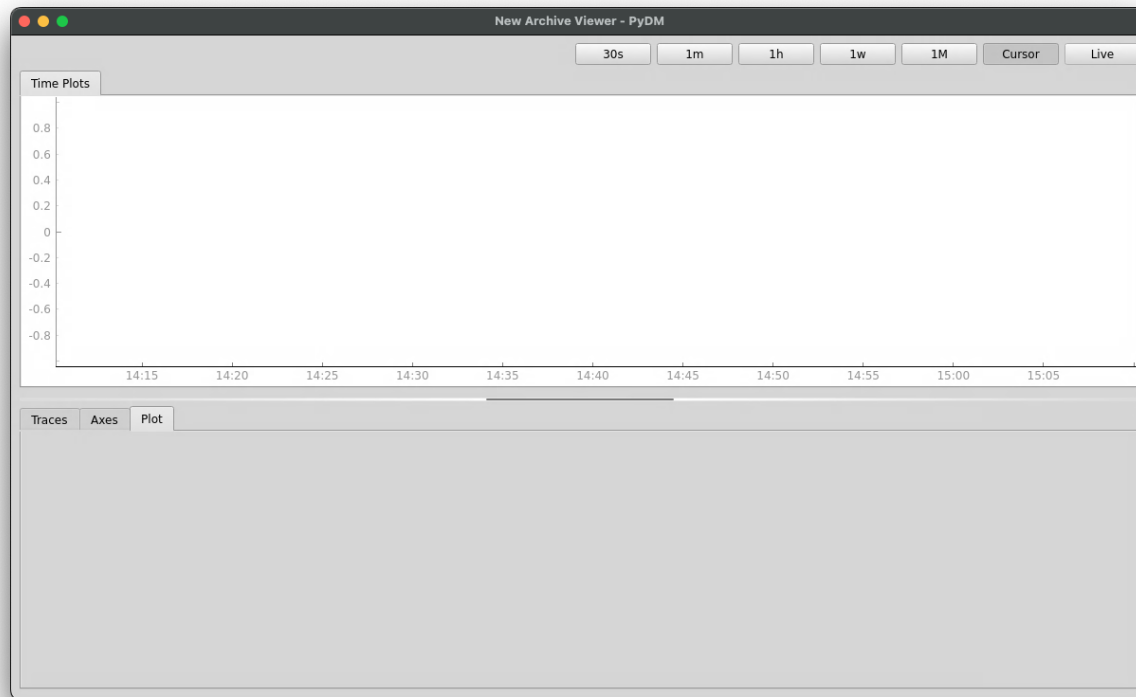


- Buttons are exclusive
- Autoscroll to reflect timerange
- Mouse controls break autoscroll
- Potential for user to set refresh rate (5s by default)

Questions?

Live Demo?

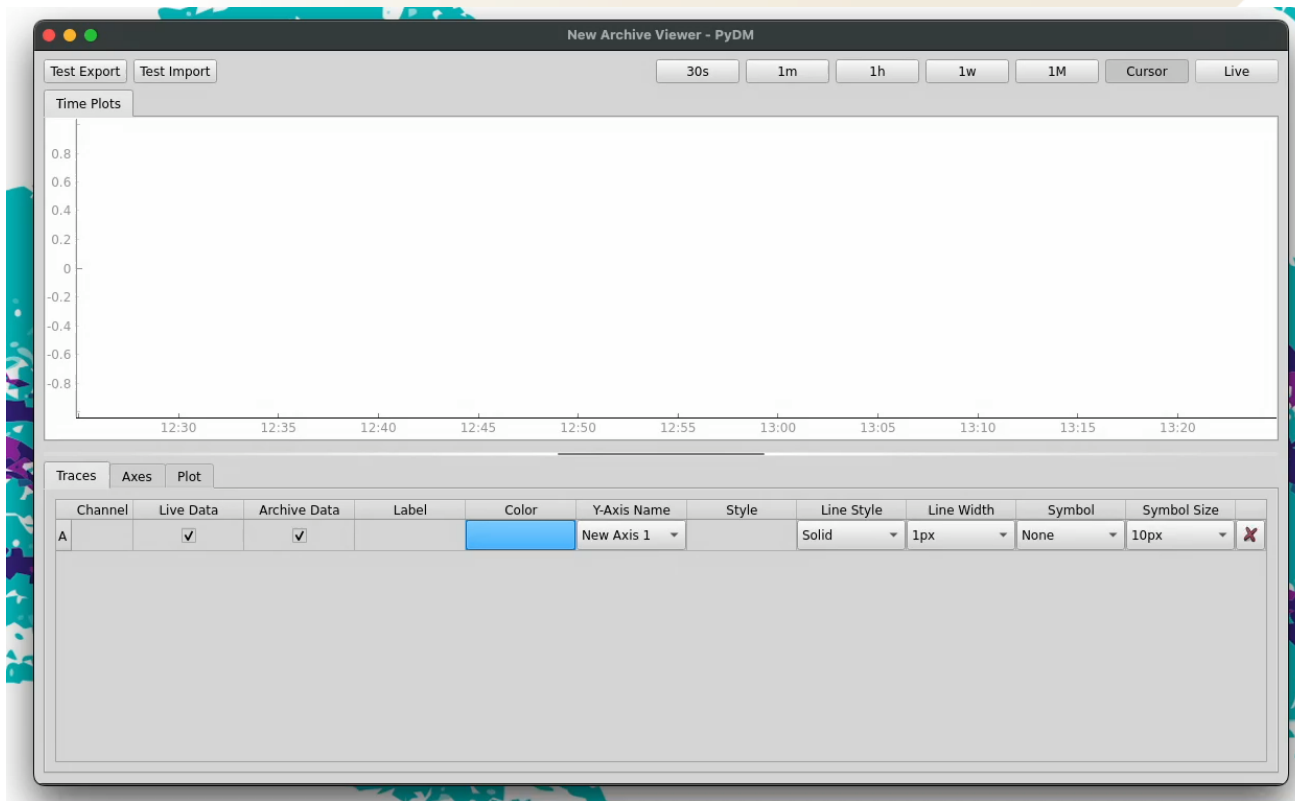
Extra Slides – Controls & Settings - Plot



Extra Slides – Axis Range Notation



Work In Progress – File Import



Work In Progress – File Export



[Java-based Archive Viewer Documentation](#)

[New Archive Viewer Requirements](#)

[Archive Viewer Github](#)

[Ongoing Progress Presentation](#)