Poseidon-Viewer Enhancement and Documentation

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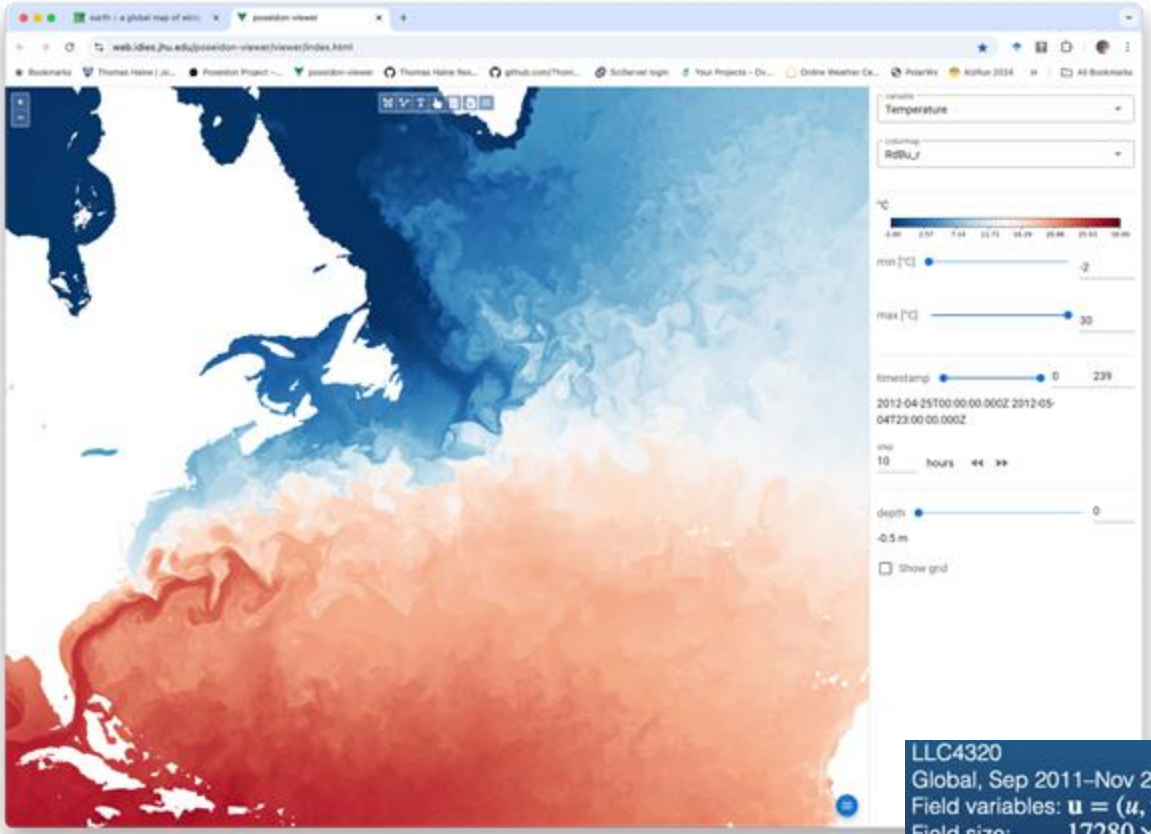
Johns Hopkins Open Source Programs Office and the Alfred P. Sloan Foundation

Poseidon-Viewer Enhancement and Documentation



LLC4320
Global, Sep 2011–Nov 2012
Field variables: $\mathbf{u} = (u, v, w), p, \theta, S, \ldots$
Field size: $17280 \times 8640 \times 90 \times 10950$
Data volume: 3.8Pb

Poseidon project

Goals:

- Improve software quality, increase functionality, document, and disseminate the Poseidon-Viewer.
- Provides easy access to massive ocean circulation model simulations, as part of the Poseidon Project
- Poseidon-viewer development was incomplete prior to this FOSSProF project.

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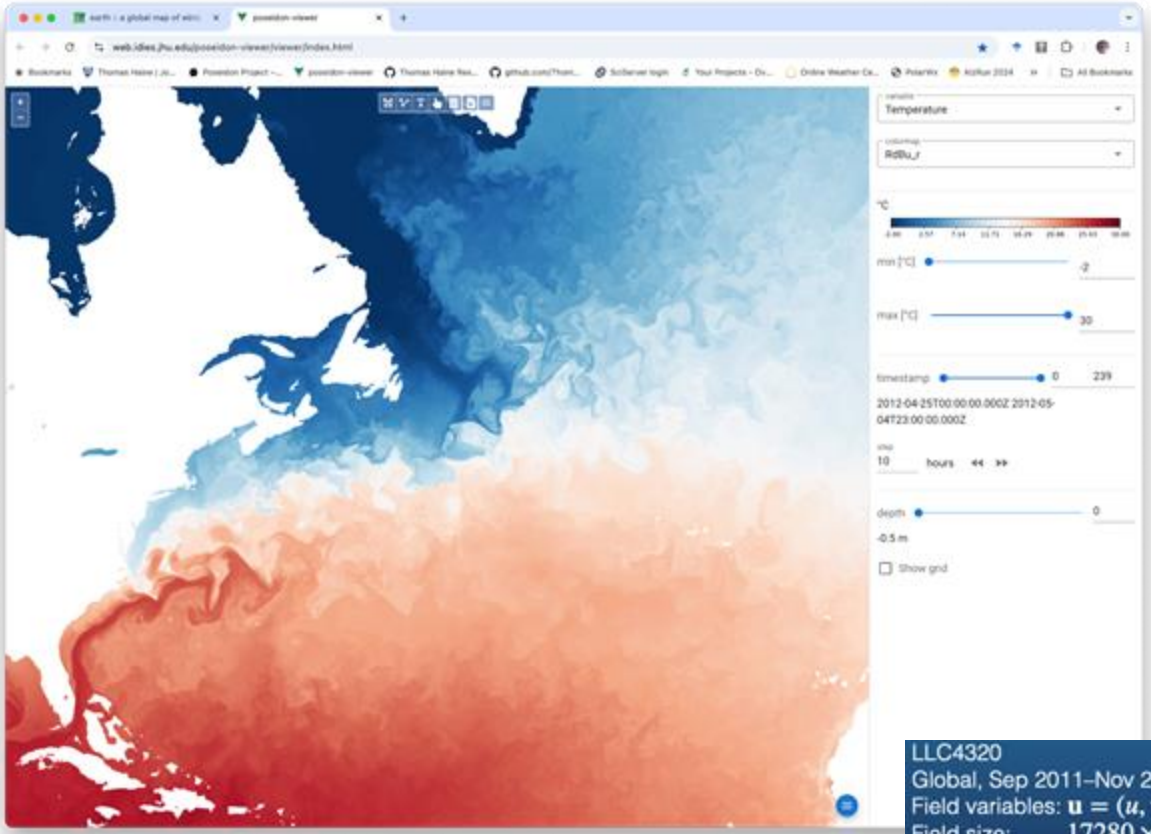

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Poseidon project

Rationale:

- Poseidon-viewer accesses the massive ocean general circulation model solutions
- The tool aligns with the vision to "democratize the ocean circulation model data", i.e., to make the data available with minimal barriers to access to anyone with a web browser.
- The tool is the gateway for users to begin accessing the Poseidon Project data, tools, and resources.

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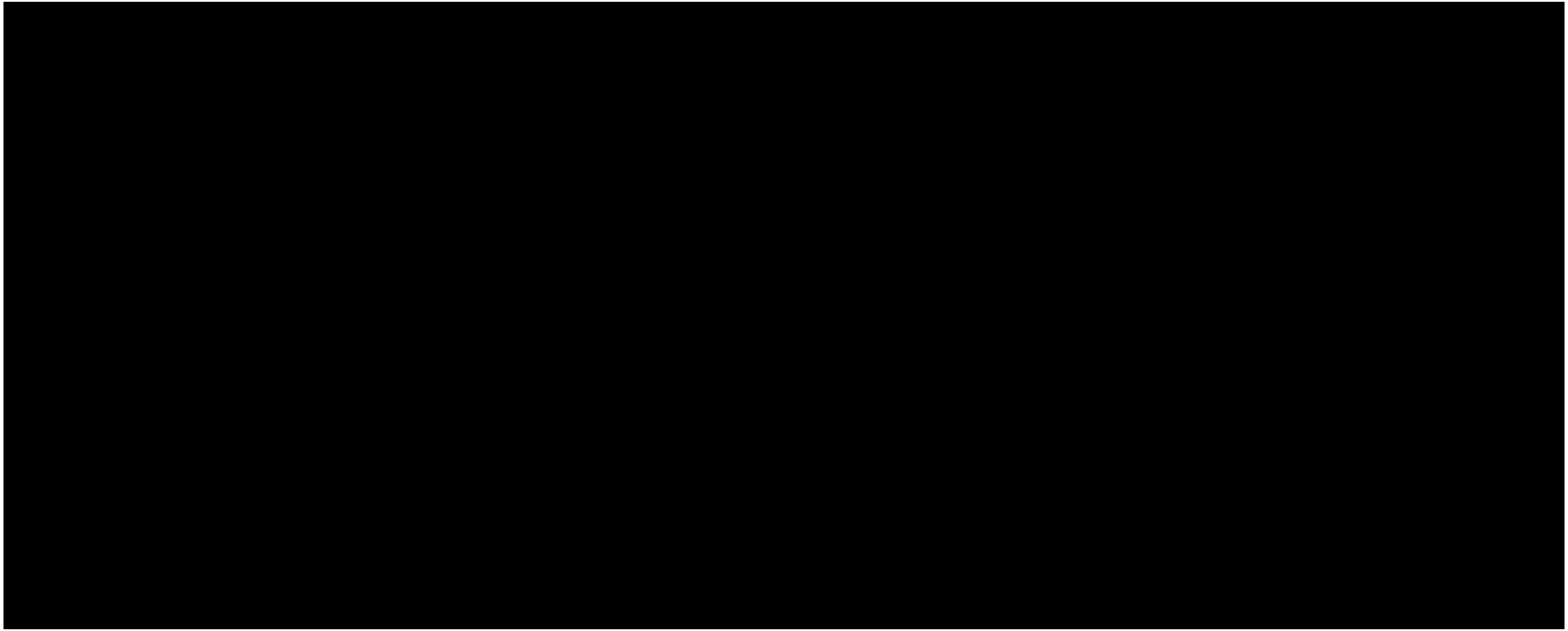

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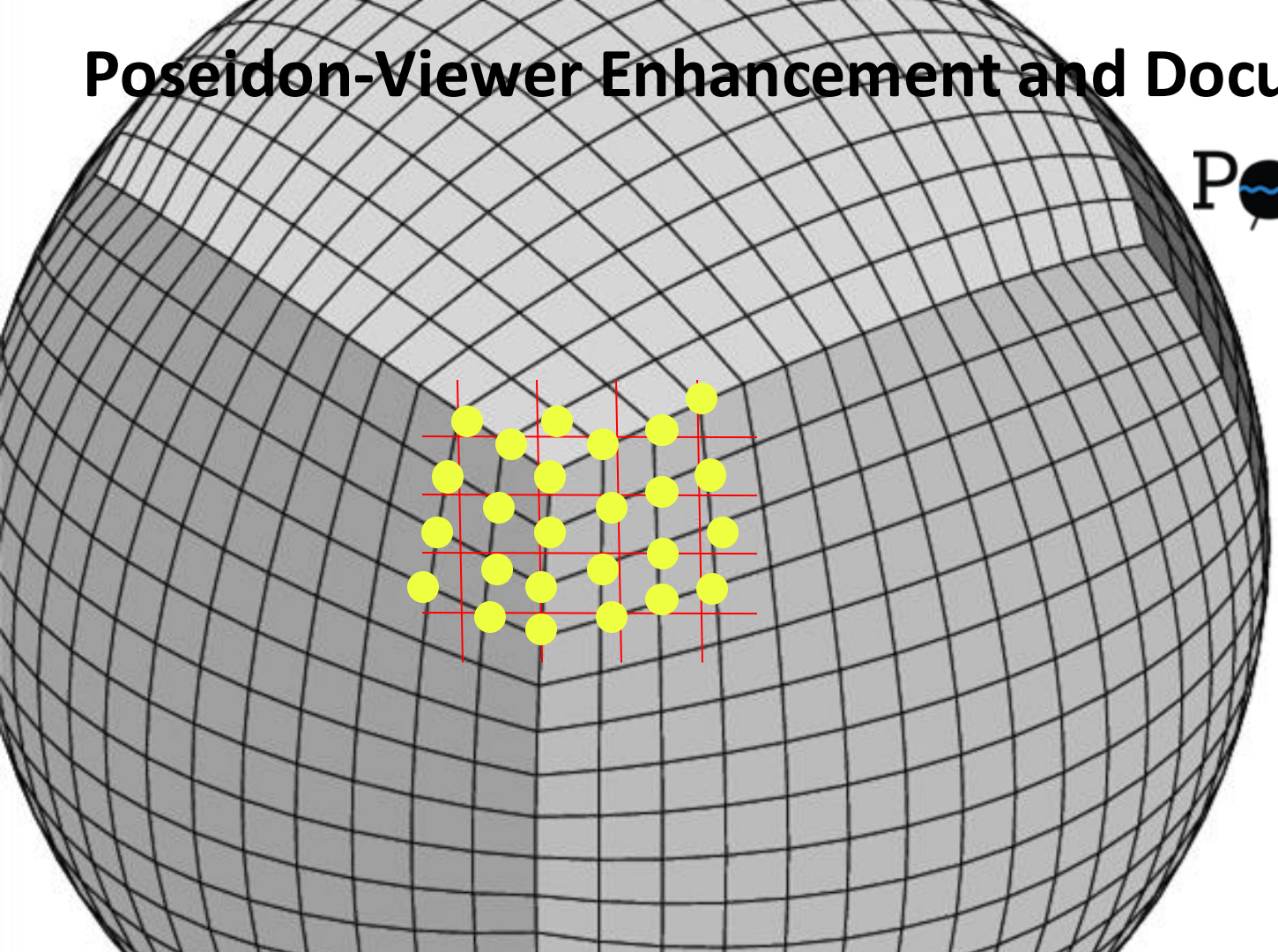

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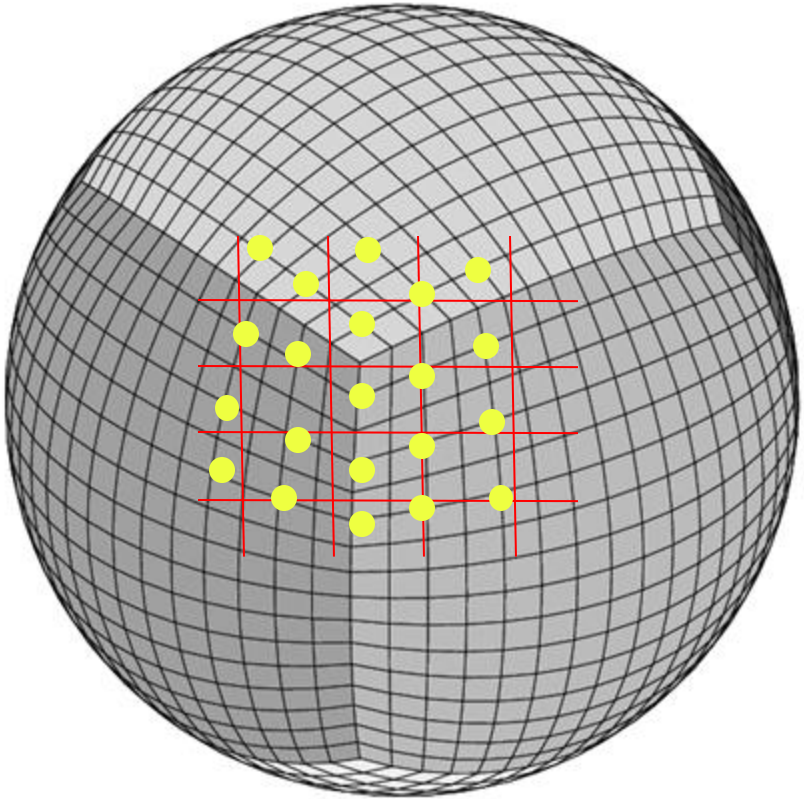

Interpolation:

- When zoomed in, use all available data.
- When zoomed out,

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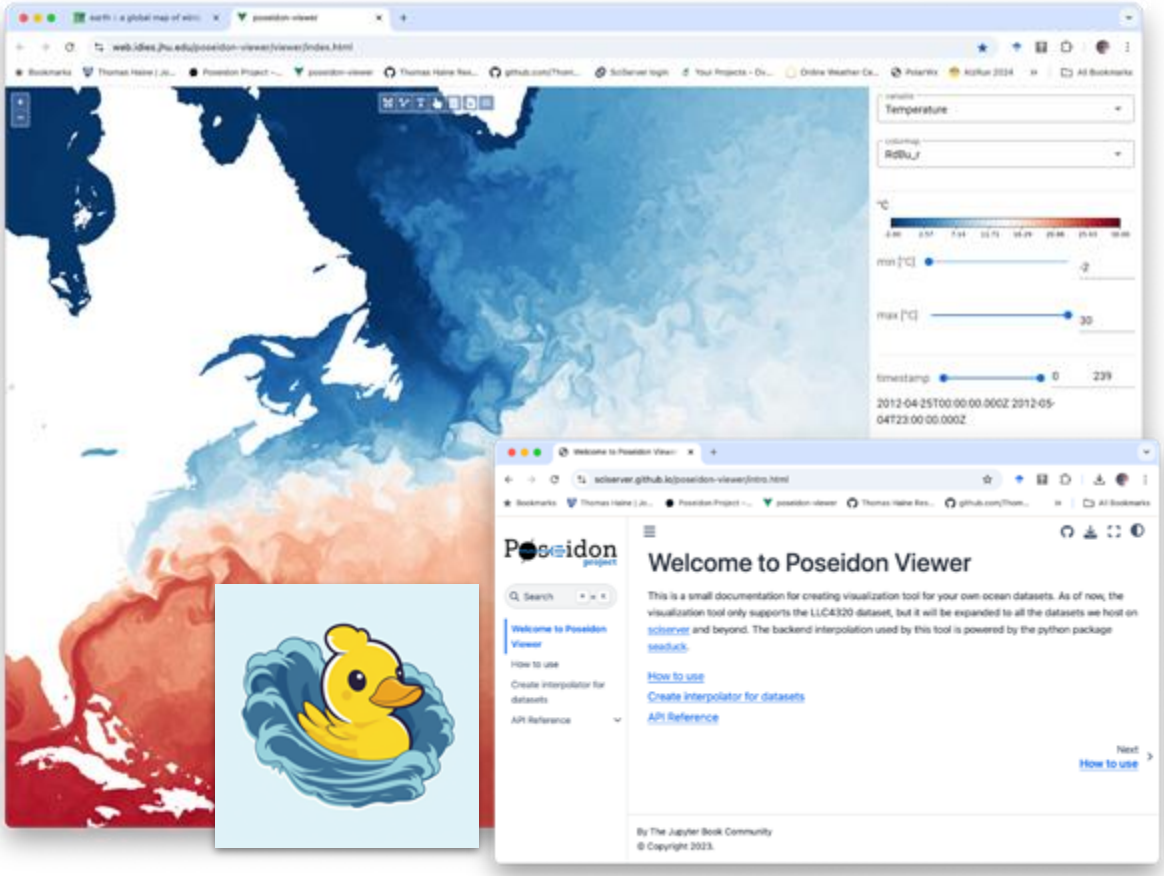

Activities:

- Refactored the code-base, made public releases, added unit tests and ci
- Enhanced functionality for mobile platforms
- Documented the tool via:
  - A Jupyter Book site linked to the GitHub repository
  - YouTube tutorial videos and news posts to the Poseidon Project home page
- Expanded functionality by code generalization, including support for other simulations

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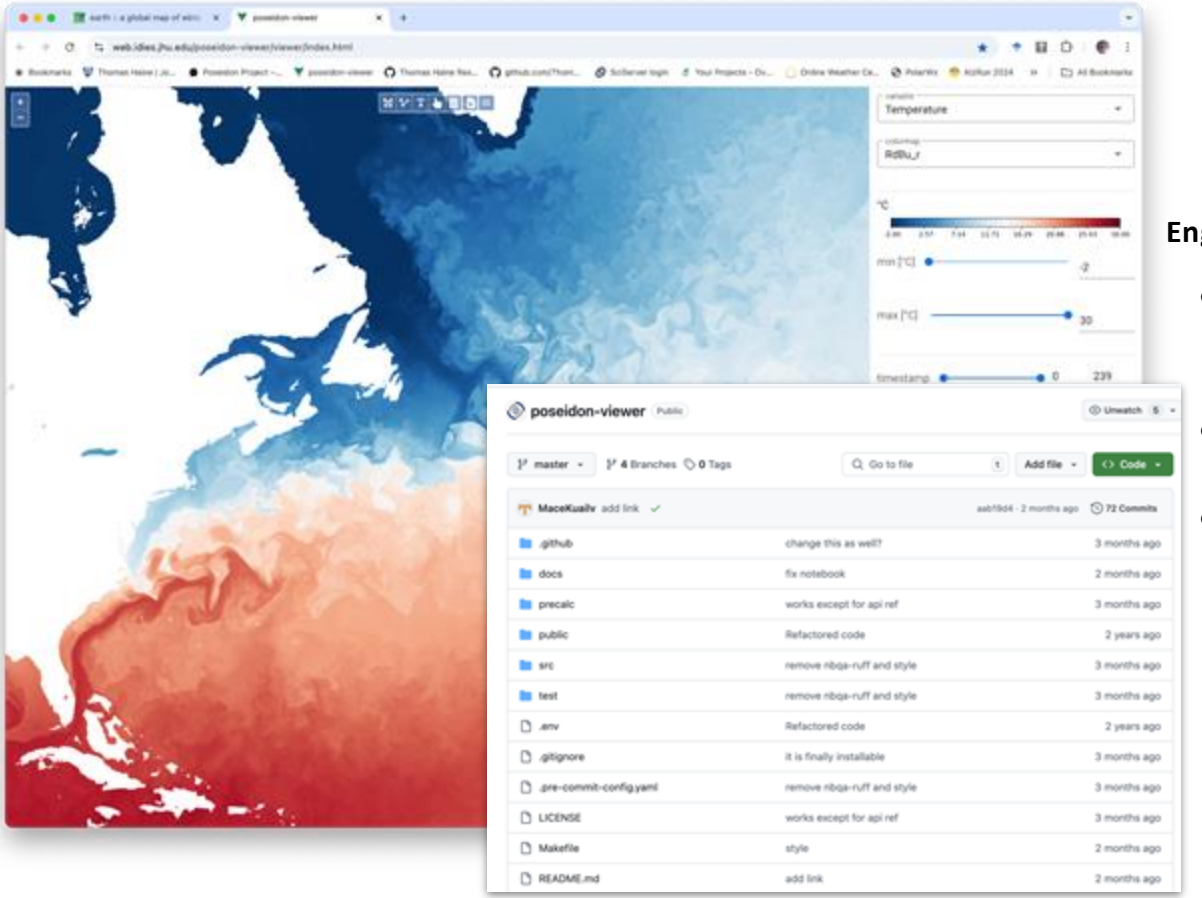

Engagement:

- 54 Github commits, 5 pull requests, new Jupyter Book documentation site, 3778++, 2447-- to code base, 4 new issues
- Two Town Hall meetings at Ocean Sciences Meeting,
- Community workshop on Data Commons in ocean/atmosphere/climate sciences at NCAR

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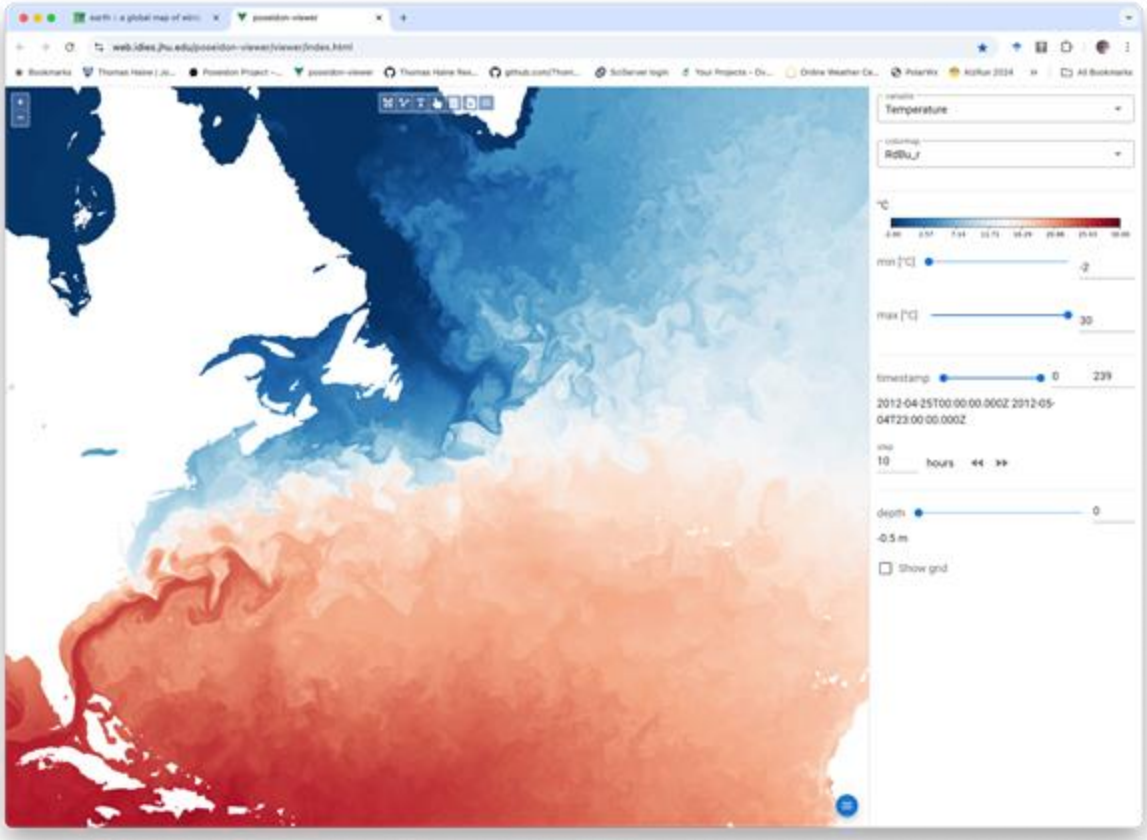

Poseidon project

Outcomes/Lessons:

- Re-factored code now wraps the Seaduck package and a standard web app configuration
- Plans to enhance the tool functionality, but optional
- Making the tool simpler and building it with off-the-shelf packages made it more robust and sustainable