What's New in GeoClaw 5.7.0?

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GeoClaw Virtual Workshop, May 22, 2020

http://www.clawpack.org/geoclawdev-2020

See also:

www.geoclaw.org

Version 5.7.0 Release Notes

html version of various notebooks:

http://www.clawpack.org/gallery/notebooks.html

Lagrangian Gauges / Particle Tracking

- Tracer particles can be passively advected with the two-dimensional velocity field computed while solving the shallow water equations.
- Can help visualize the flow, eddies, etc.
- Do not affect the flow, so not necessarily realistic model for how ships or large debris would move in flow.
- Do not settle on bottom and become stationary in very shallow flow.
- Implemented by specifying additional gauges in `setrun.py` with indication that they should be moved in each time step (using Forward Euler).

Lagrangian Gauges / Particle Tracking

A couple examples:

- **Port Angeles Harbor** Fluid velocity (knots) and particles during Cascadia Subduction Zone tsunami
- **Example in GeoClaw Gallery**
  `$CLAW/geoclaw/examples/tsunami/island-particles`
- Documentation:
  `http://www.clawpack.org/lagrangian_gauges.html`

Motivation — Modeling Whidbey Island / Skagit

Recent project for Washington State with complex topography

- **Some plots and report**
- **Other recent UW Tsunami Modeling Group projects**

Some enhancements described in documentation and the **Gallery of Jupyter Notebooks**:

- Ruled Rectangles: **Documentation**
- Marching Front algorithm: **Documentation**
- Force regions to be dry initially: **Documentation**
- Set varying initial surface level eta: **Documentation**