Community Analysis on PyClaw

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What is PyClaw?

- A Python-based interface to the algorithms of Clawpack and SharpClaw
  - Clawpack: package for solving hyperbolic PDE systems in 1/2/3D; includes a number of solvers originally in Fortran
  - SharpClaw: higher-order wave propagation using WENO reconstruction and Runge-Kutta integration, in 1/2D

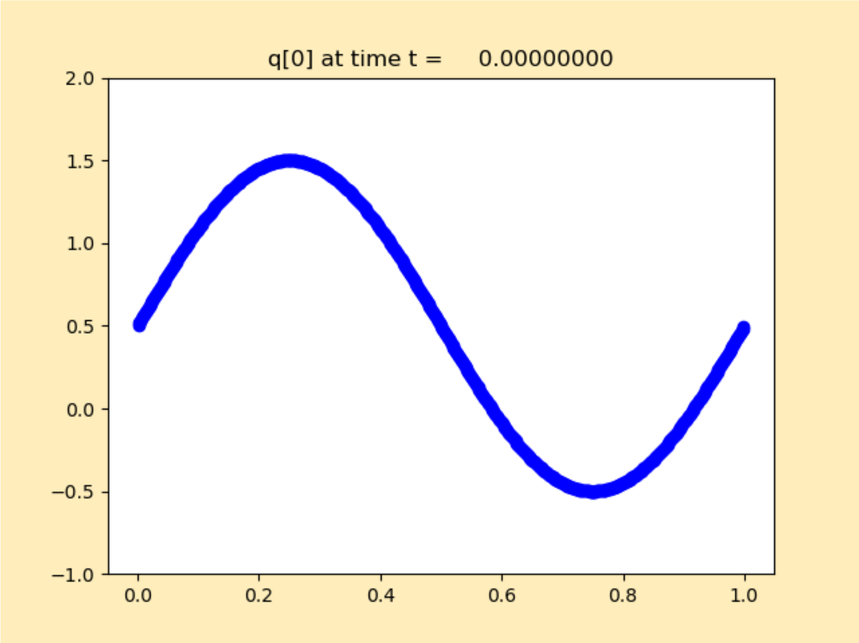
Some stats

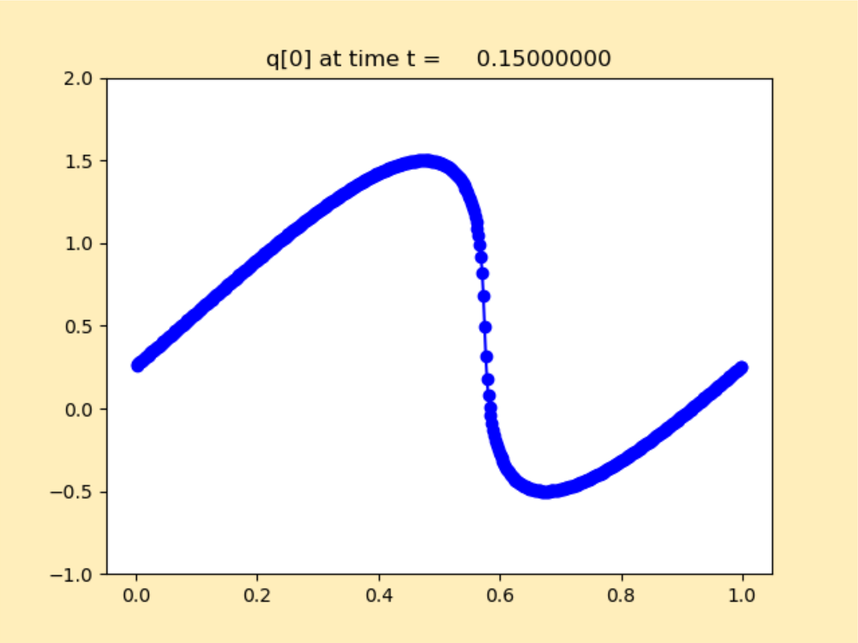
- Started in 2010
- 34 contributors in the lifetime of the project
- Development discussions take place on Github, Gitter, Twitter, google group
- 0-4 commits every week in the past two months
- Accepts contributions thru pull requests, PyClaw issue tracker
- No legal/licensing steps required to contribute

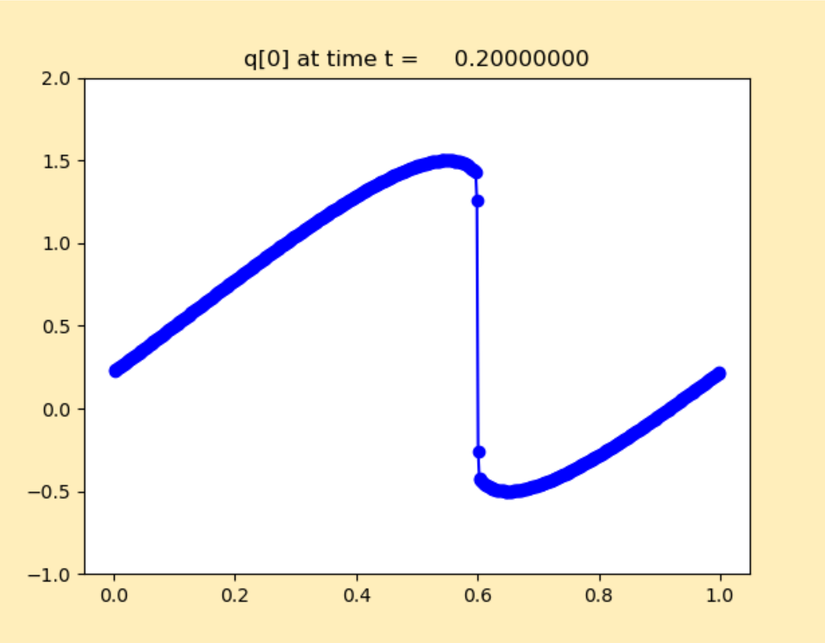
Examples available

- 1-dimensional advection
- 1-dimensional variable-velocity advection
- 1-dimensional acoustics
- 1-dimensional Burgers' equation
- 1-dimensional shallow water equation
- 1-dimensional nonlinear elasticity
- 1-dimensional Euler equations
- 2-dimensional advection
- 2-dimensional variable-coefficient advection
- 2-dimensional acoustics
- 2-dimensional variable-coefficient acoustics
- 2-dimensional advection-reaction
- 2-dimensional shallow water equations
- 2-dimensional shallow water on the sphere
- 2-dimensional Euler equations
- 2-dimensional KPP equation
- 2-dimensional p-system

Burgers' equation 1D







Possible contribution ideas

- New example or tutorial
- Experiment on one system with both Clawpack and SharpClaw and compare the accuracy and cost.