

A (partially-implemented) hydrodynamics code

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1 Introduction

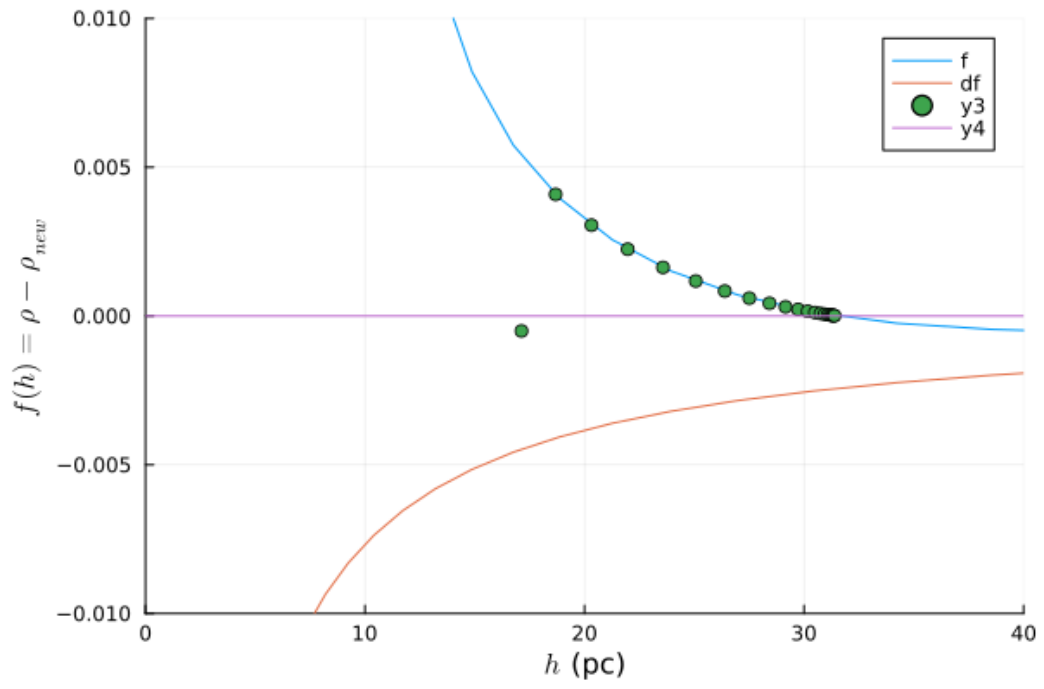
Here, I describe some of the structure of the code here, and since the program is heavy on the equations, I also note the critical equations.

The code is written in Julia

2 Structure

The main body of the code is in the `src/` directory. This directory includes the files

- `GalaxySim.jl`. This just imports and exports other pieces of the project.
- `evolve.jl` contains the main loop of the simulation, including the leapfrog integration scheme and time-step criteria
- `gal_files.jl` writes the simulation outputs to files. (Unfortunately, other io to files for testing are scattered through the project)
- `density.jl` contains routines for density estimation.
- `gravity.jl` calculates the gravity
- `physics.jl` all the rest of the physics (hydrodynamics, viscosity, etc.)



3 Validation