

Ramses Team

Members

Romain Teyssier (PU astro & PACM)
Jonathan Palafoutas (PU PACM)
Robel Geda (PU astro)
James Sunseri (PU astro)
Rayan Ait Eikoui (PU astro)
Takanori Akieda-Codron (PU astro)

Mentors

Matt Coleman
(PU Research Computing)
Brent Leback (Nvidia)



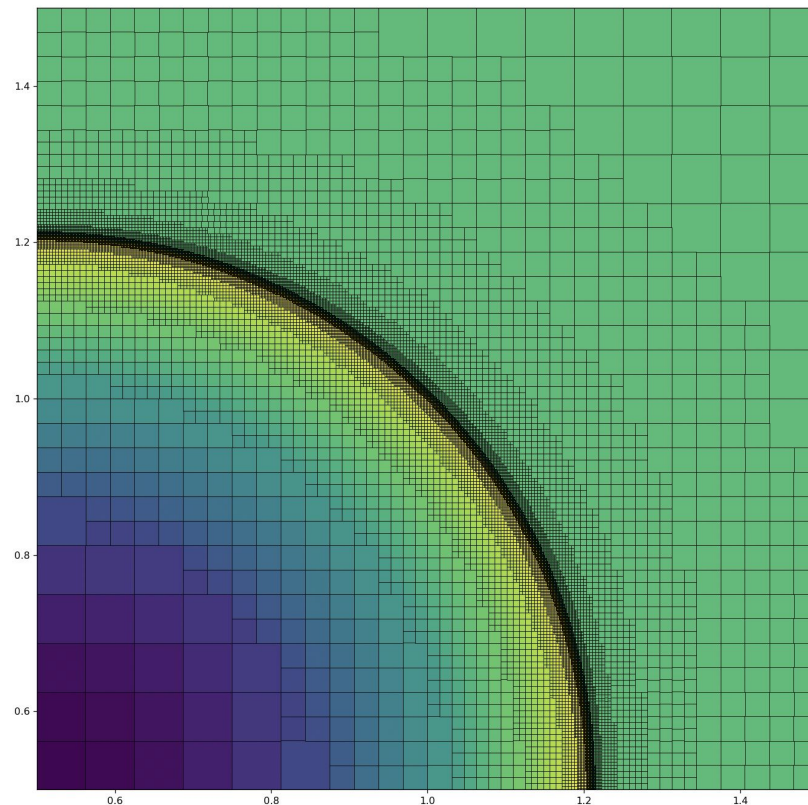


RAMSES (mini-ramses)

Adaptive Mesh Refinement for radiative MHD with self-gravity and PIC for astrophysical fluid flows

- PDE solvers using cell-by-cell adaptive grids
- MPI
- Modern Fortran
- Godunov Finite Volume Scheme
- Nvidia Fortran (CUDA)

<https://bitbucket.org/rteyssie/mini-ramses/src/develop/>



Goals

- First version written by Bob Caddy for a unigrid on a single GPU
- Extend to unigrid with multiple GPUs
- Profile the resulting code with Nsight Systems and Nsight Compute
- Optimize data transfer exploiting concurrency
- Explore next steps: AMR with multiple GPUs