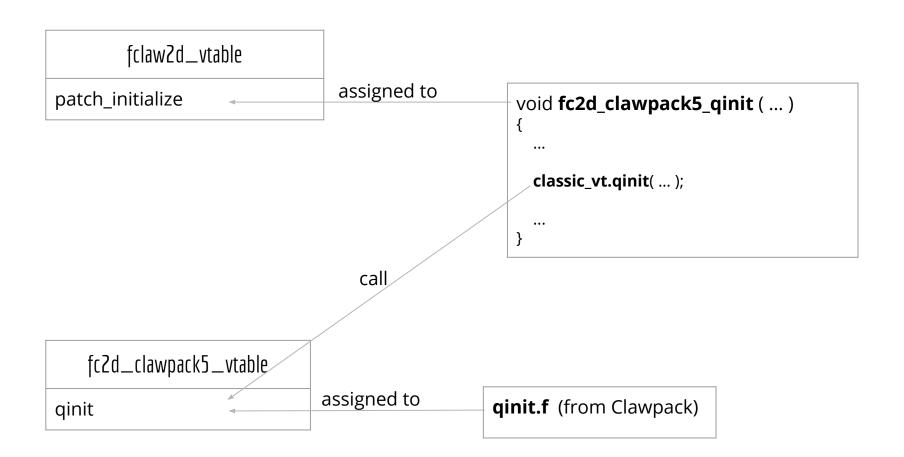# Import Clawpack5 and GeoClaw into ForestClaw

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Two tables in ForestClaw

fclaw2d_vtable
patch_initialize
patch_physical_bc
patch_single_step_update
...
regrid_average2coarse
regrid_interpolate2fine
regrid_tag4refinement
regrid_tag4coarsening
...

fc2d_[solver]_vtable
setprob
bc2
qinit
...
b4step2
src2
rpn2
rpt2
...

fclaw2d_vtable
patch_initialize

assigned to

```
void fc2d_clawpack5_qinit ( … )
{
   …

   classic_vt.qinit( … );

   …
}
```

call

fc2d_clawpack5_vtable
qinit

assigned to

qinit.f (from Clawpack)

Clawpack5 (fc2d_clawpack5)

- Copy all the files in solver fc2d_clawpack46
- Relabeling all the functions
- Replace 4.6 fortran routines with the equivalent routines from the current release of clawpack
- Change access of q array in routines that are not directly take from Clawpack. For example, interpolate_fv2.f

GeoClaw (fc2d_geoclaw)

- Similar work in fc2d_clawpack5
- Additional work:

fclaw2d_vtable	Functions	Fortran routine	Reference
regrid_tag4refinement	fc2d_geoclaw_patch_tag4refinement	geoclaw_tag4refinement	flag2refine2.f90
regrid_tag4coarsening	fc2d_geoclaw_patch_tag4coarsening	geoclaw_tag4coarsening	
regrid_interpolate2fine	fc2d_geoclaw_interpolate2fine	geoclaw_interpolate2fine	filpatch.f90
regrid_average2coarse	fc2d_geoclaw_average2coarse	geoclaw_average2coarse	update.f

(assigned to — call)

Tag4coarsening routine for fc2d_geoclaw

IDEA:

Coarsen the patch if the coarsened patch won't be tagged for refinement.

- Check that this patch is not in the region that forced to be refined.
- Check the perturbation of the water is less than the wave tolerance or not. If not, not coarsen the patch.