Introduction to Makefiles

- Fortran and C directories now have these routines:
  - OBJECTS
    - list of .o files corresponding to your .f90 or .c files
    - it needs these to build the executable program ('pgm2')
  - OPTIONS
    - C: default of nothing (OPTIONS =) means to take *defaults*
    - Fortran: subscript checking and traceback are set
      - I added an option to suppress one annoying warning
    - You can always un-set one option (putting # before it), and select another (remove the leading #)
  - Briefly: dependencies

Update: My 502/Pgm2 directory

- Fortran and C directories now have these routines:
  - Main program:
    - **pgm2.f90** / **pgm2.c** << *these files are there now*
    - there are placeholders for calling bc(), advection(), etc
  - Makefile + routines –
    - Fortran makefile was updated – compile options
    - bc (first part done), ic, contr, sfc
  - Specific to a language:
    - global_data.f90 • For C: parameters.h
  - You can copy whatever you need from these files.
    - as they are, you can run 'make', run, get the IC plotted.

Overview: Changes from Pgm1 > Pgm2

- I have put new *partly-finished* main program files (pgm2.f90 and pgm2.c) in ~bjewett/502/Pgm2
- You will have to:
  1. Create / verify the initial condition of *s1, u, v* before proceeding further.
  2. *Hold off* on coding *Takacs*, *6th-order Crowley* or the Takacs errors.
  3. Rename program 1's *advection* to *advect1d* (.c or .f90)
  4. Create a new *advection* routine to do the advective sweeps.
     - Each x/y advection pass copies a row or column of *s1* and the appropriate velocity component array, passes these when calling *advect1d()*, and puts the resulting 1-D output back into array *s1*.
     - Delete update() and plot1d() files. Update the Makefile (discussion).
     - Configure your code for the online test settings and compare your plots against those fields.