# CVS Check In 3.1.9 Tag 14

The thermosphere/ionosphere extension of WACCM based on cam3\_1\_9tag14 will be checked in to the CVS repository as a new branch. The modified codes are added in two ways:

- 1. All but the 4 dynamics routines are put under a new subdirectory: /tiphys under chemistry and physics directories.
- 2. The 4 dynamics routines replace those in cam3\_1\_9 under /dynamics/fv with the same name.

## Specifically:

#### /chemistry/tiphys:

mo\_tgcm\_ubc.F90, mo\_waccm\_hrates.F90, upper\_bc.F90 (without ifdef TIPHYS) chemistry.F90, mo\_mean\_mass.F90 (with ifdef TIPHYS)

#### /physics/tiphys:

iondrag.F90, majorsp\_diffusion.F90, nlte\_lw.F90, radheat.F90, vertical\_diffusion.F90 (without ifdef TIPHYS) diffusion\_solver.F90, geopotential.F90, gw\_drag.F90, inti.F90, molec\_diff.F90, phys\_adabatic.F90, phys\_idealized.F90, physics\_types.F90, tphysac.F90 (with ifdef TIPHYS)

### /dynamics/fv:

dp\_coupling.F90, prognostics.F90, stepon.F90, te\_map.F90 (all with ifdef TIPHYS).

Two modules which are different from tag 12 to tag 14 are nlte\_lw.F90 and radheat.F90 so these tag 14 routines were modified with Hanli's changes. The rest of the modules in tag 14 are identical to tag 12.