Explanation on updating files:

**Albedo:**

3 schemes of albedo calculation now is available in airsea.f90.

In line 1430: albedo = alb1(jab) +.5(alb1(jab+1)-alb1(jab))\*(altitude-alt(jab)) (Payne approach)

In line 1453: albedo = 1-Trans\_1 (OS\_2000 approach)

In line 1491: albedo = f\_dir+alphasdir+f\_dif\*alphasdif+0.006 (Jin approach, note there is albedoe = 0.55\*fwc+albedo\*(1-fwc) for foam correction has been coded but not have been used)

To use the different approach of albedo calculation, simply comment out the other two albedo calculation lines, and leave the rest the same.

**Extinct case 13:**

Since case 13 involves reading IOP data, I have made changes on read\_chlo.f90, observations.f90, and temperature.f90. Also, adding absorption coefficient and backscattering coefficient inside of chlo.dat.

Changes in read\_chlo.f90 and observations.f90 is simply for it to read IOP data; while temperature.f90 contains the equations. Angle adaption can either be included or not, it does not change temp much.

To run case 13, simply set extinct\_method in obs.inp to be 13.

(Note that IOP dat in the new locations are in a separate file (iop.dat) from chlo.dat, so one would either need to move iop.dat into chlo.dat, or code gotm to read iop.dat while case13 get chosen.

In addition, airsea.f90 contains some testing code for skint, and they are all commented out. Similarly, temperature.f90 contains case14 that potentially can be used for different purposes. Both would not affect gotm and wait for testing.