**esm15\_rad**

Changes in code (CABLE3-ESM): cbl\_radiation.F90

! Define fraction of SW beam tranmitted through canopy:

IF( cable\_runtime%esm15\_rad) THEN

dummy2 = -rad%extkb \* canopy%vlaiw

dummy = EXP(dummy2)

ELSE

dummy2 = MIN(rad%extkb \* canopy%vlaiw,30.) ! vh version to avoid floating underflow !

dummy = EXP(-dummy2)

ENDIF

IF( cable\_runtime%esm15\_rad) THEN

VegTemp = met%tk

ELSE

VegTemp = met%tvrad

ENDIF

IF( cable\_runtime%esm15\_rad) THEN

WHERE (sunlit\_veg\_mask) ! i.e. vegetation and sunlight are present

CanopyExtincion\_beam = EXP( -rad%extkbm(:,1) \* canopy%vlaiw )

CanopyExtincion\_dif = EXP( -rad%extkdm(:,1) \* canopy%vlaiw )

END WHERE

ELSE

WHERE (sunlit\_veg\_mask) ! i.e. vegetation and sunlight are present

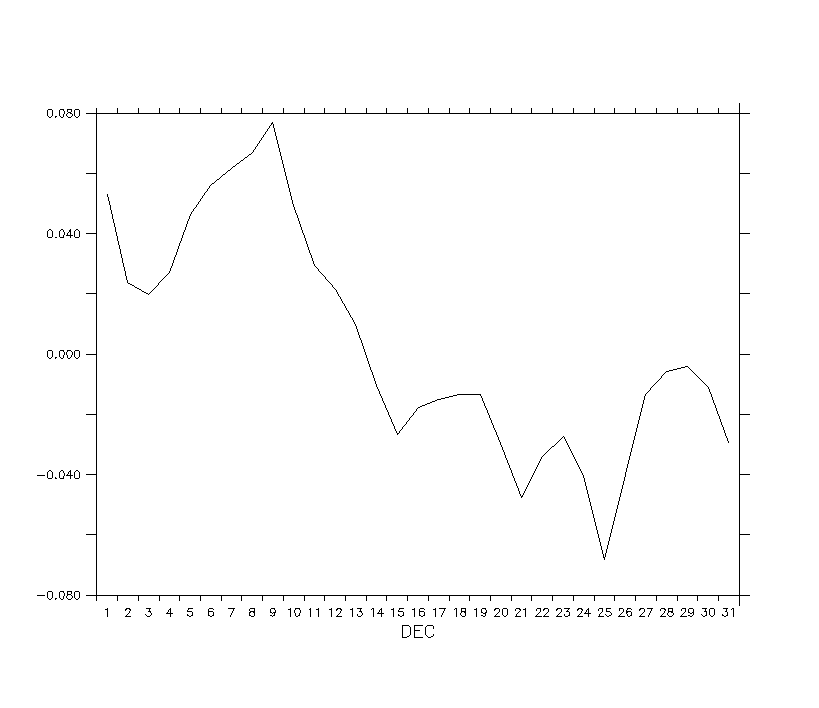
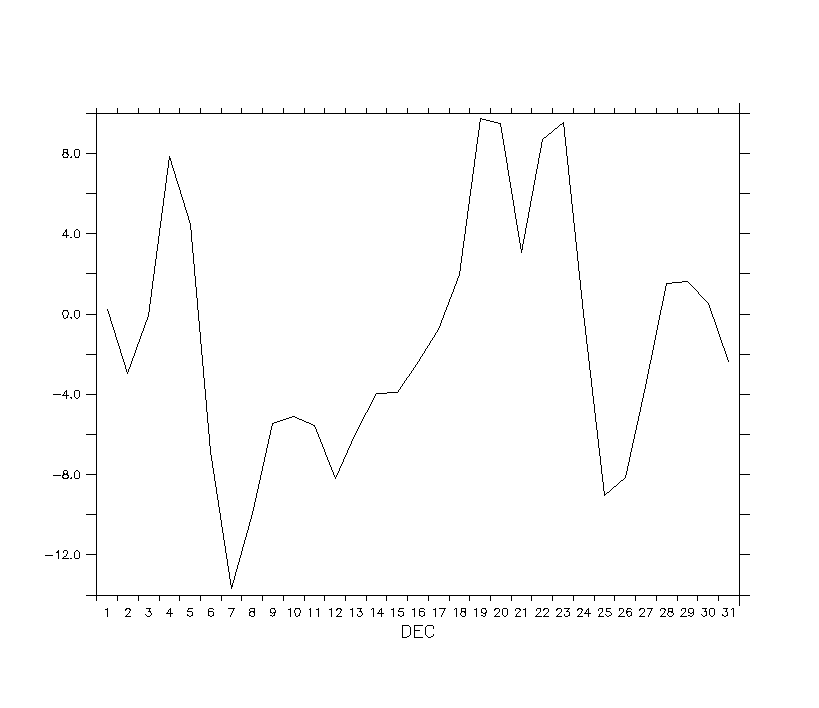
CanopyExtincion\_beam = EXP( -MIN(rad%extkbm(:,1) \* canopy%vlaiw,20.) )

CanopyExtincion\_dif = EXP( -MIN(rad%extkdm(:,1) \* canopy%vlaiw,20.) )

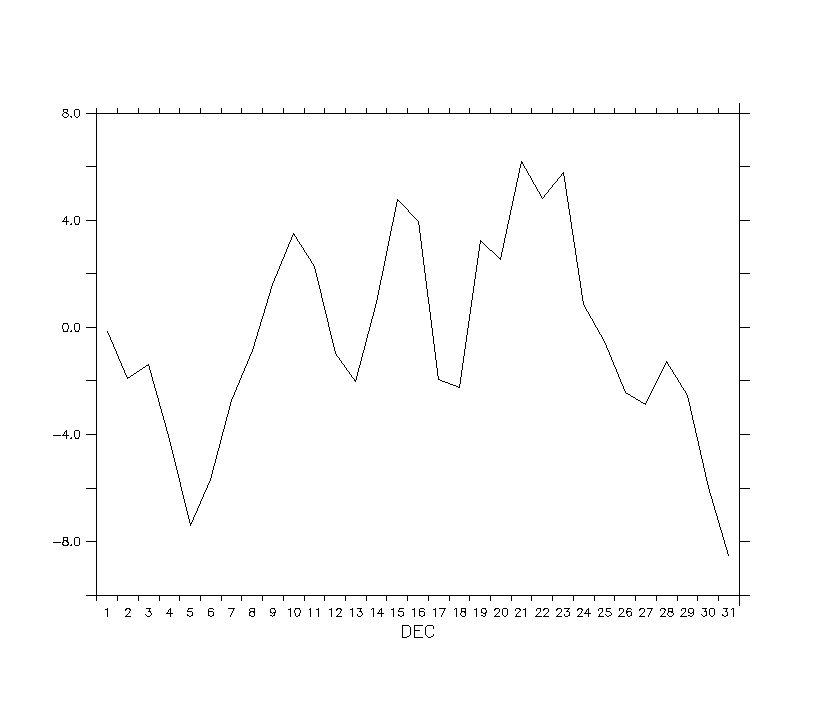
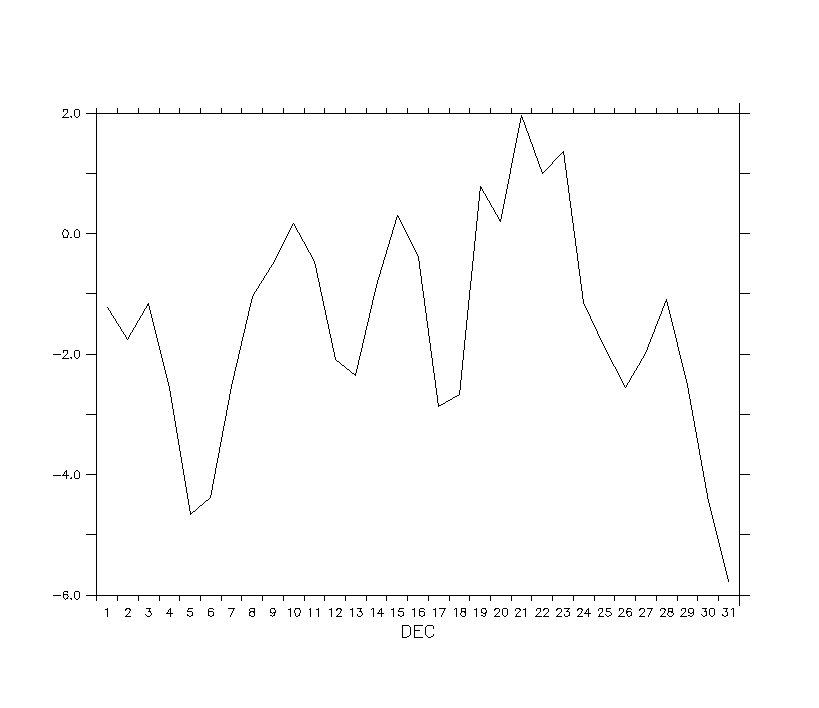
END WHERE

ENDIF

Effect on climate:



Effect on carbon:



Recommendation: