

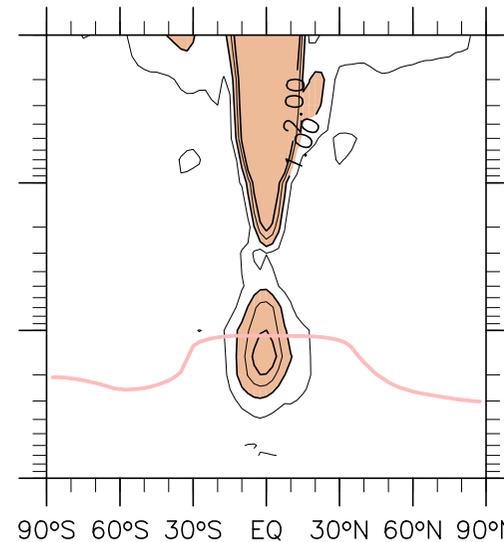
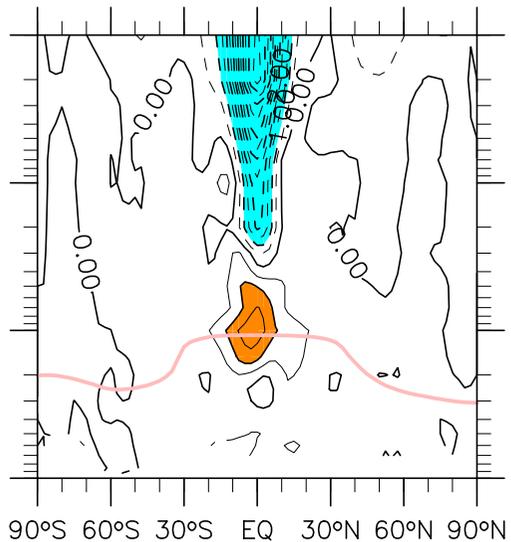
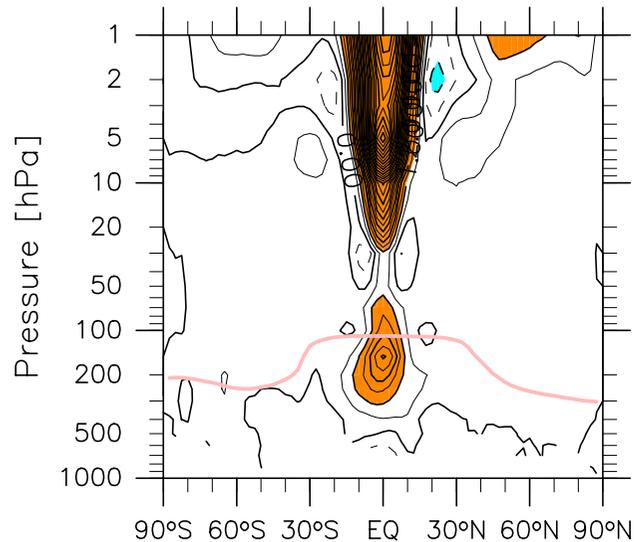
u [m/s]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

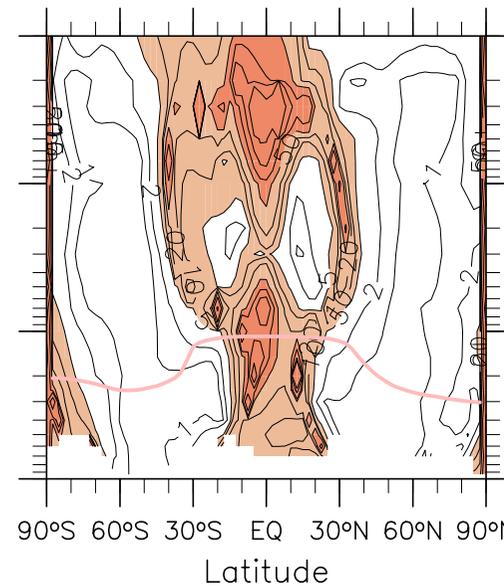
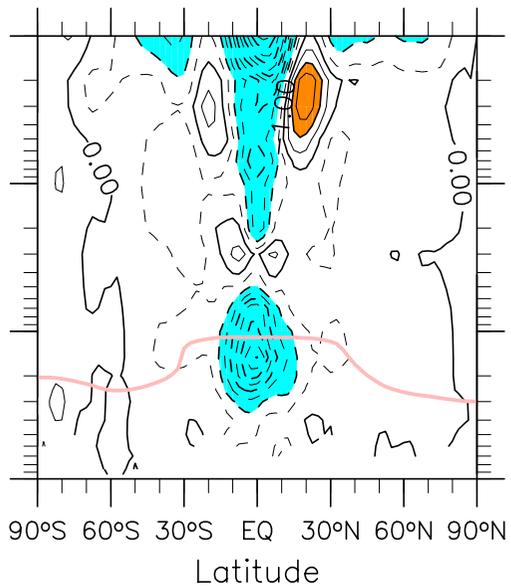
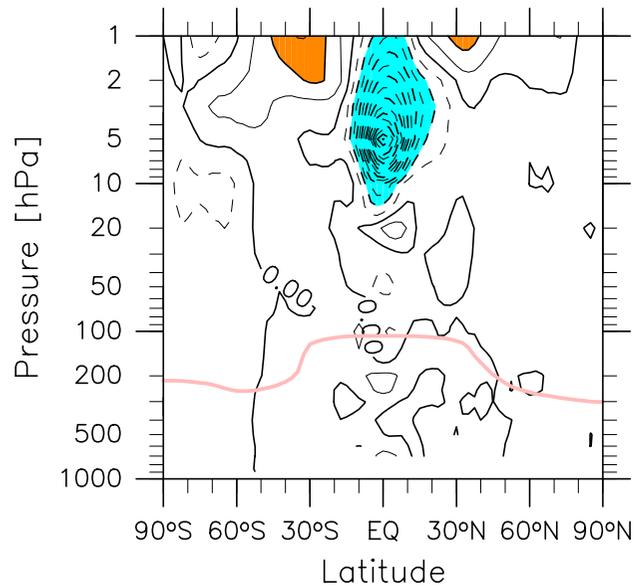
(e) SD

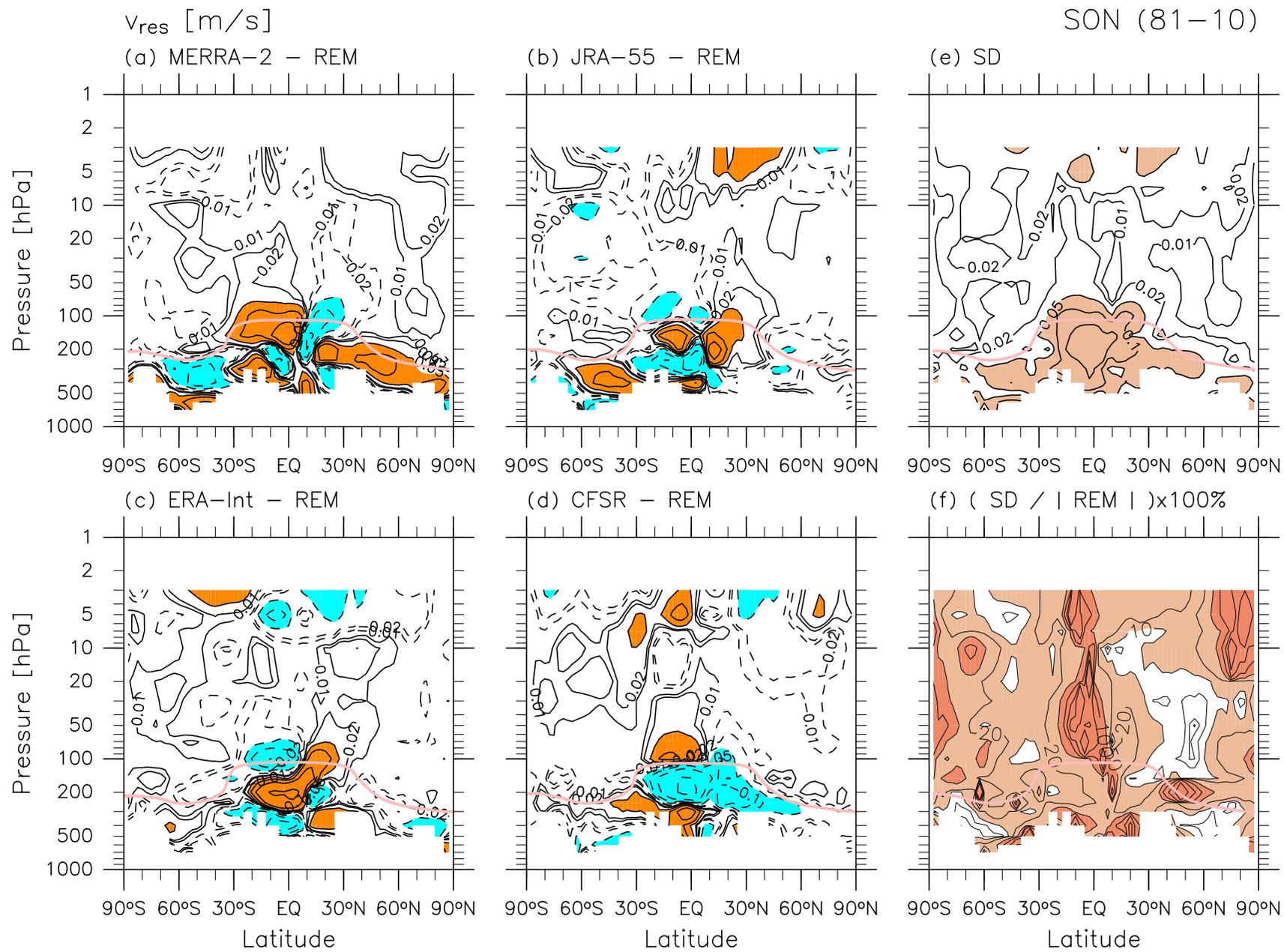


(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%





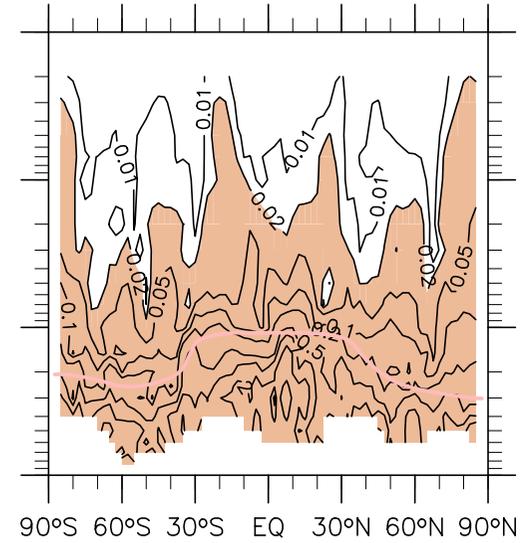
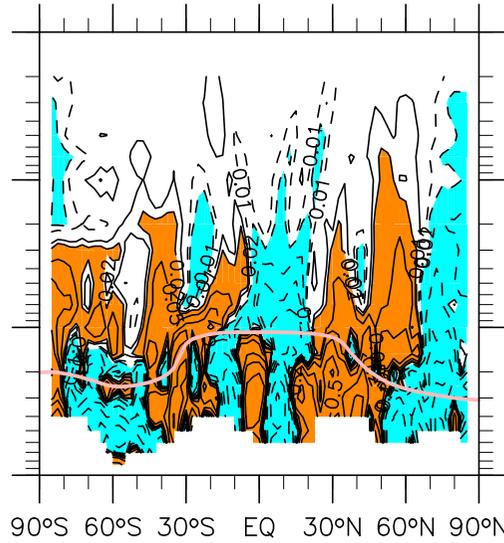
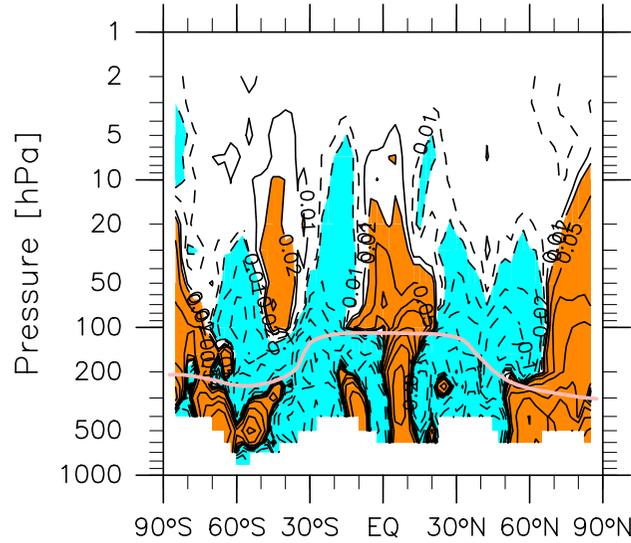
ω_{res} [mPa/s]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

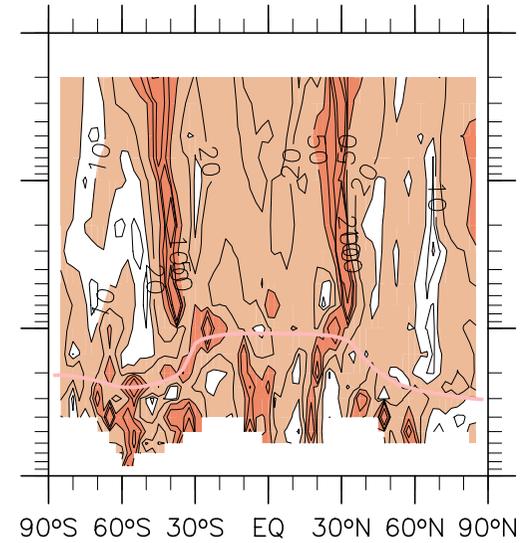
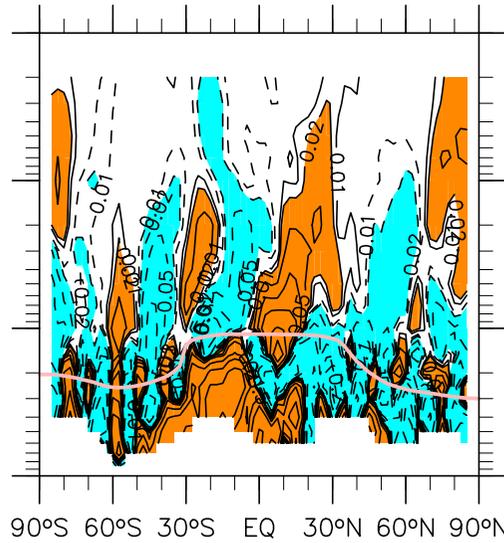
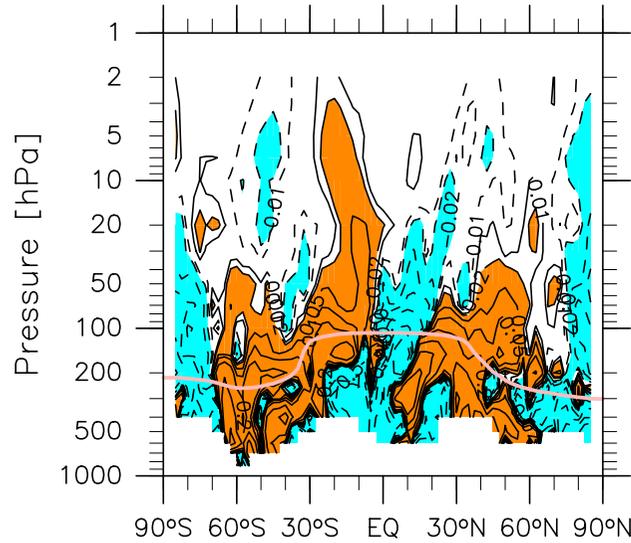
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



Latitude

Latitude

Latitude

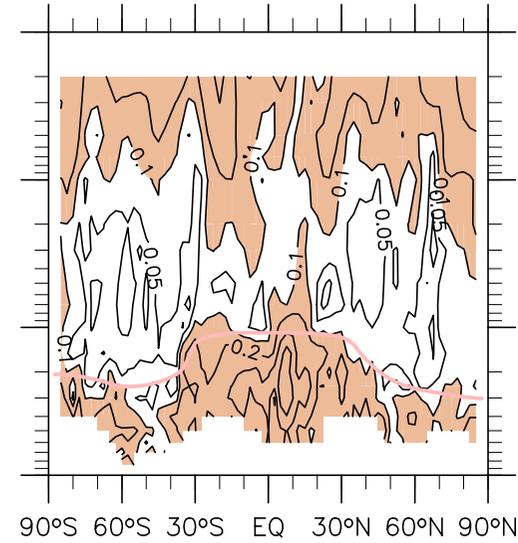
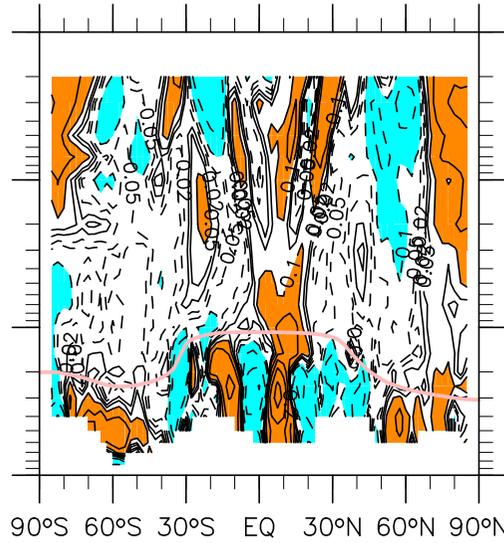
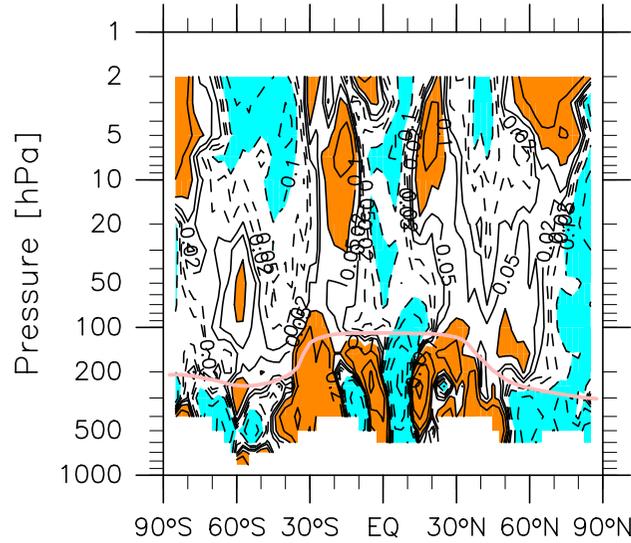
w_{res} [mm/s]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

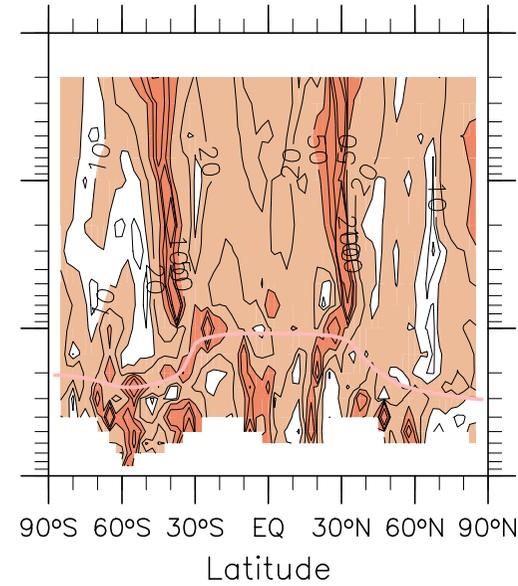
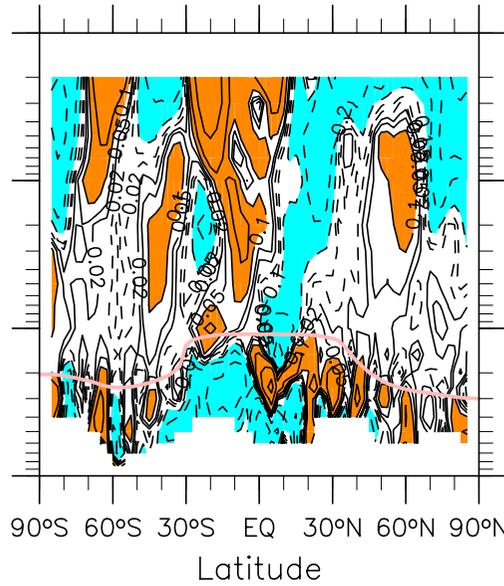
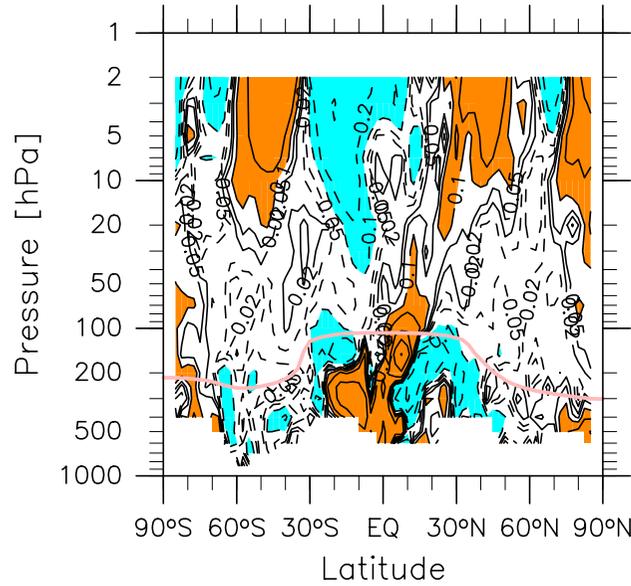
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) $(SD / |REM|) \times 100\%$



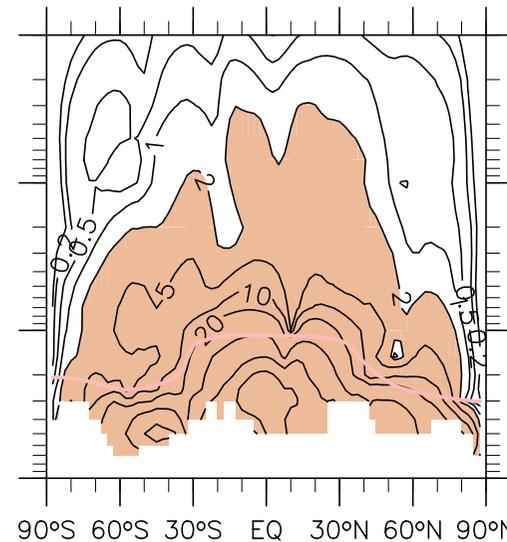
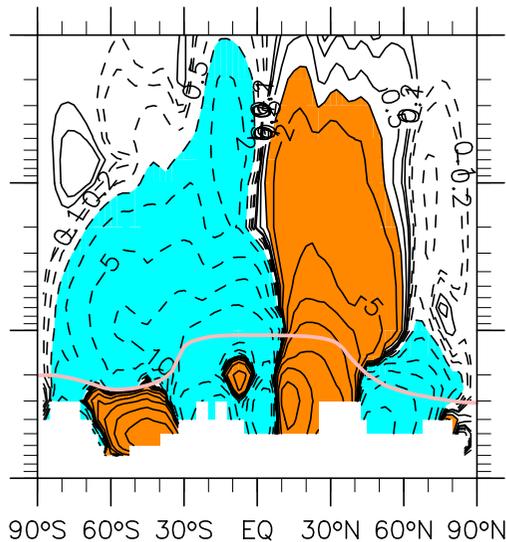
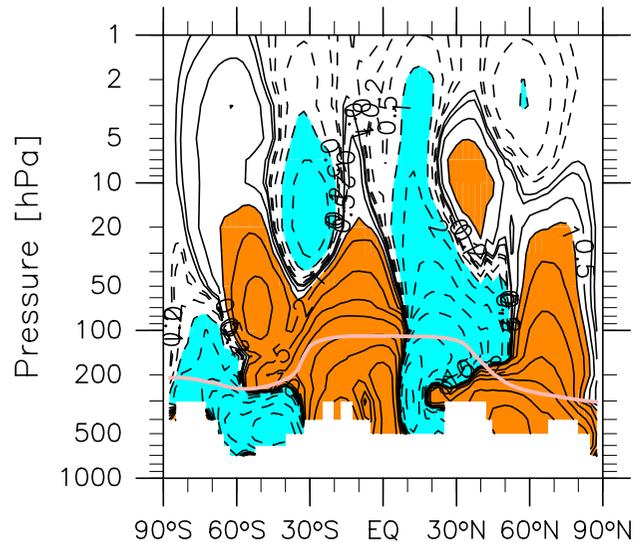
Ψ_{vres} [kg/m/s]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

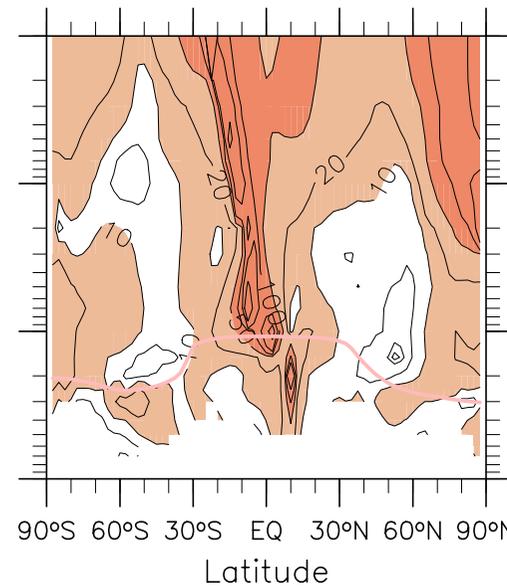
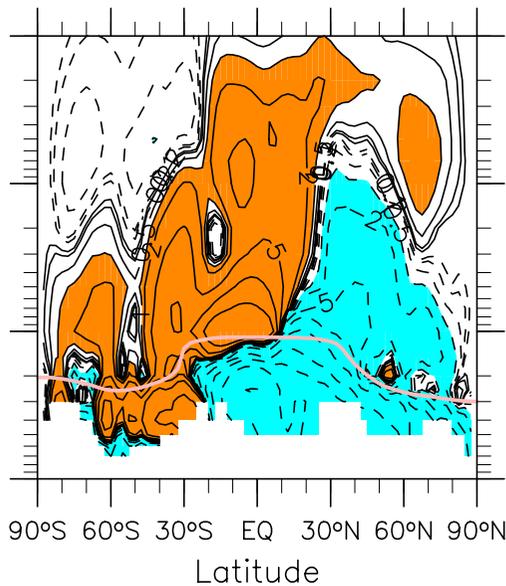
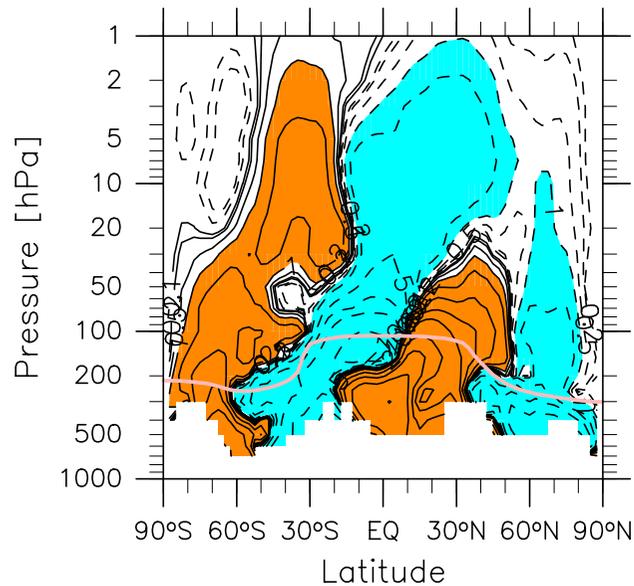
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



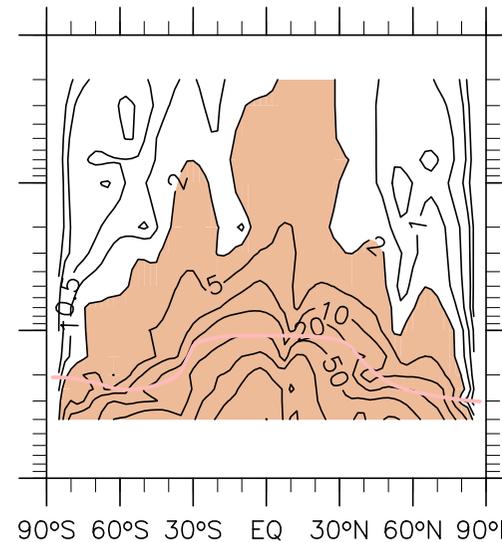
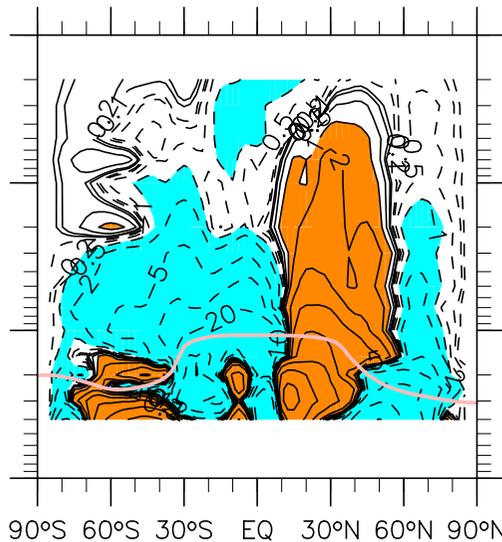
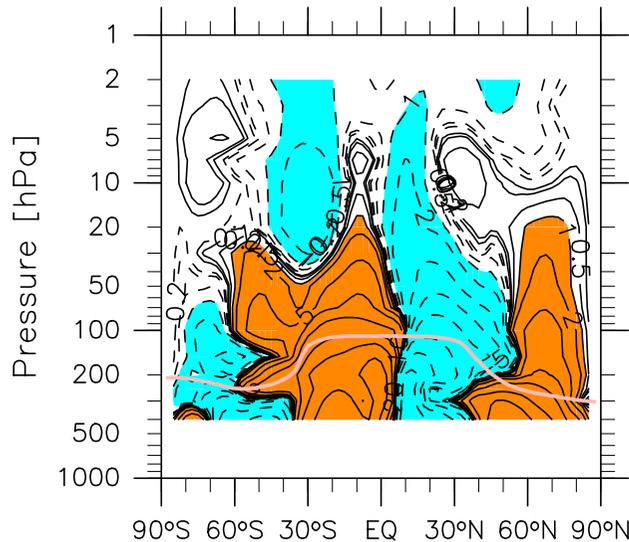
Ψ_{wres} [kg/m/s]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

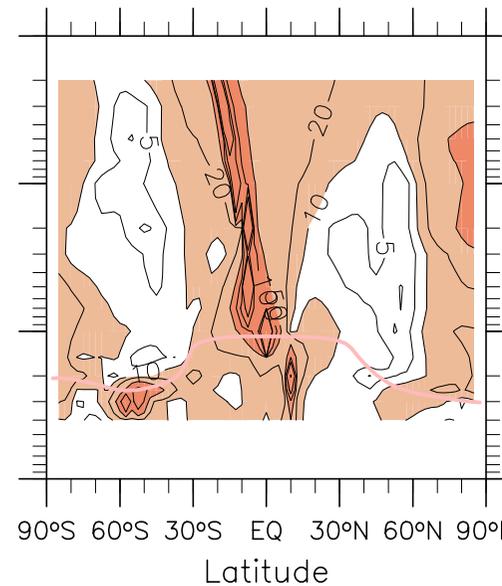
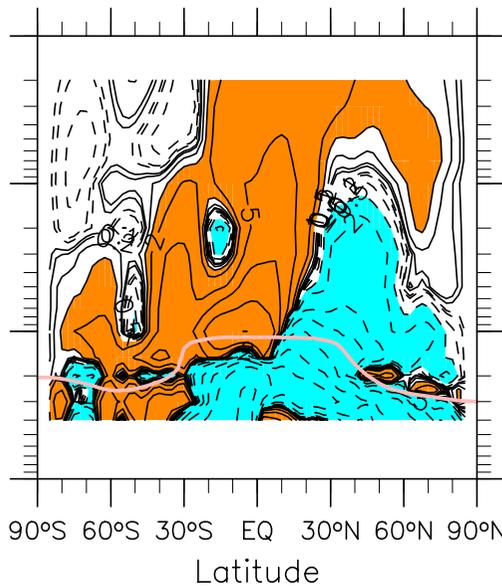
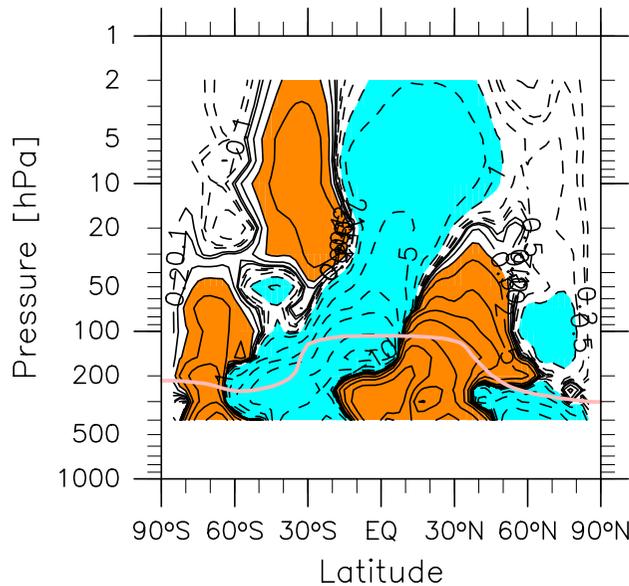
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



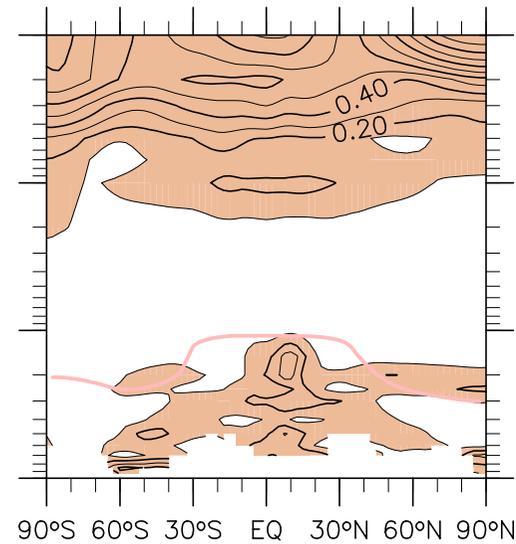
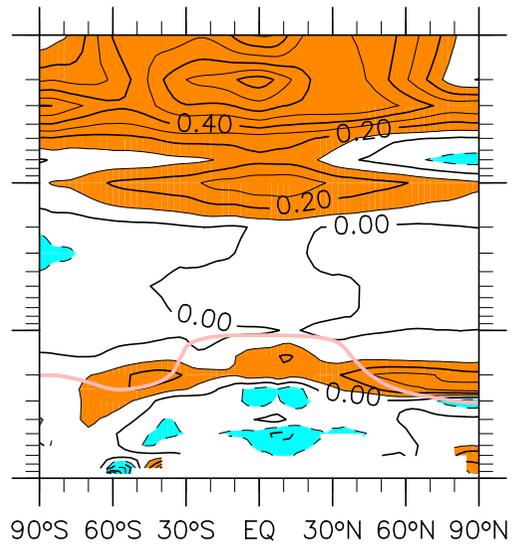
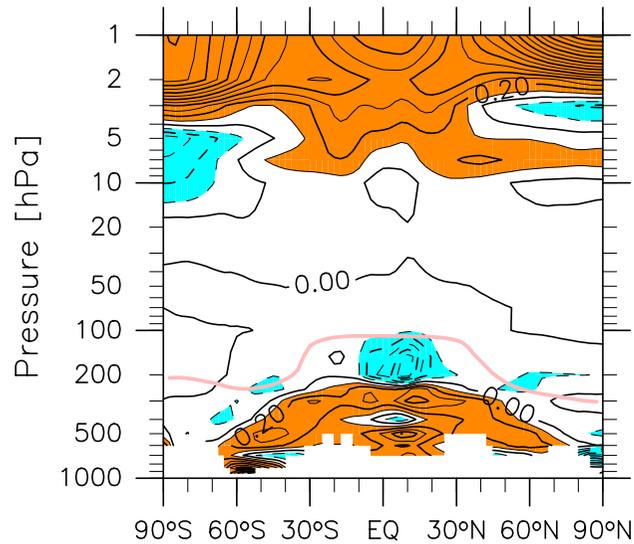
Q_longwave [K/d]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

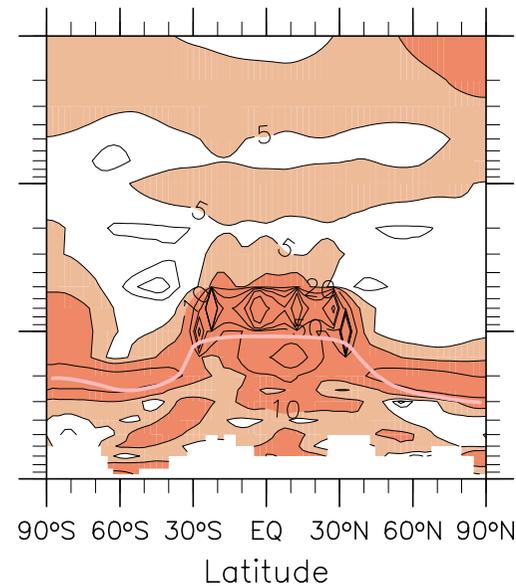
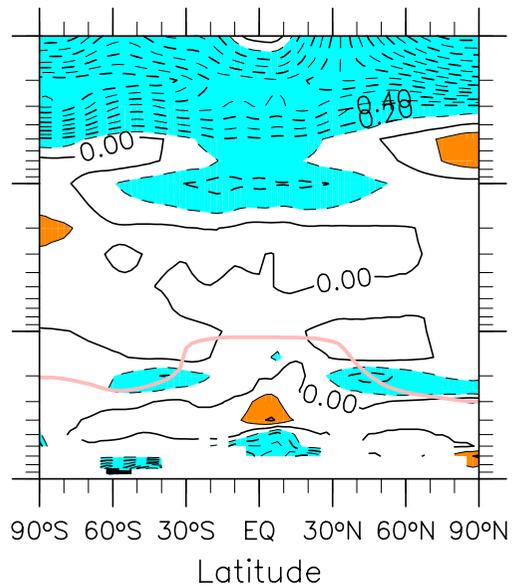
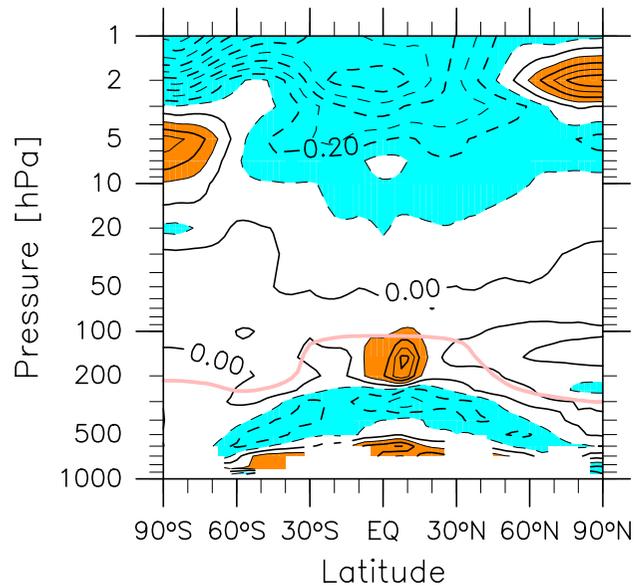
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



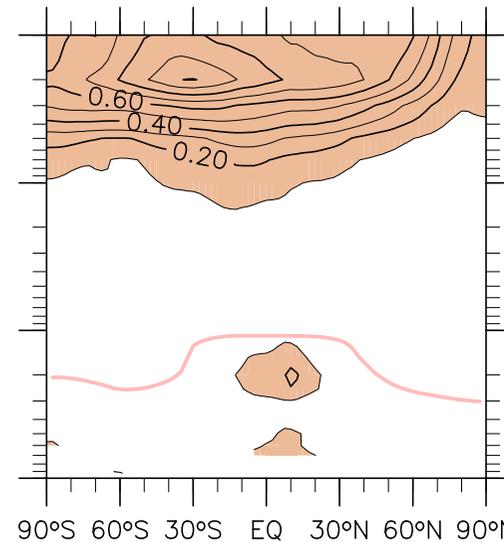
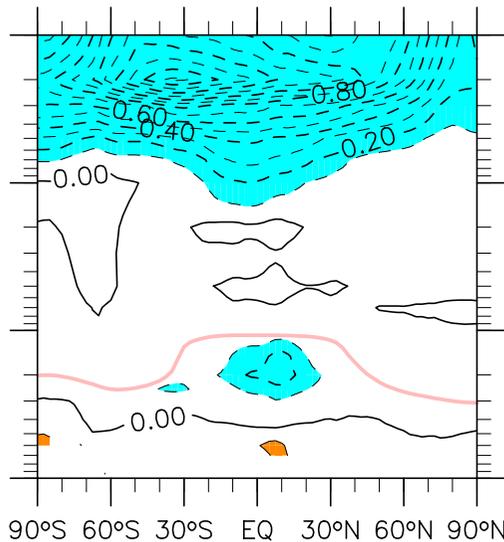
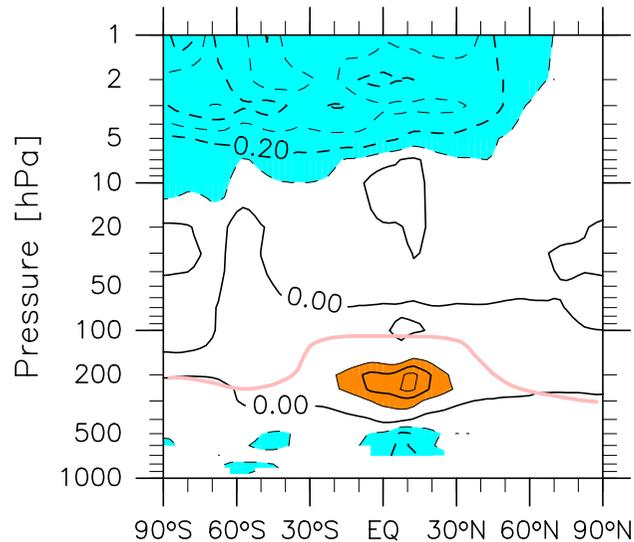
Q_shortwave [K/d]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

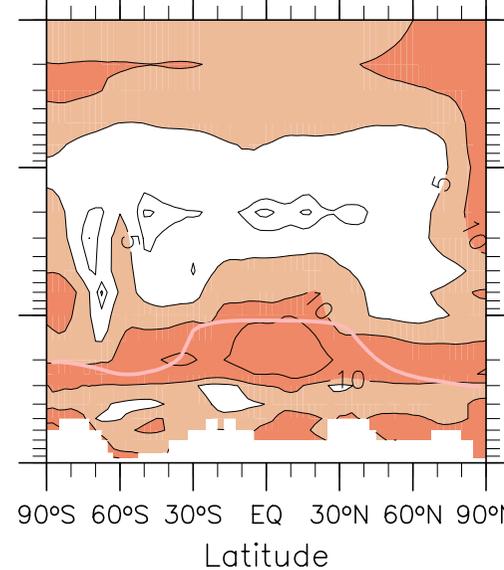
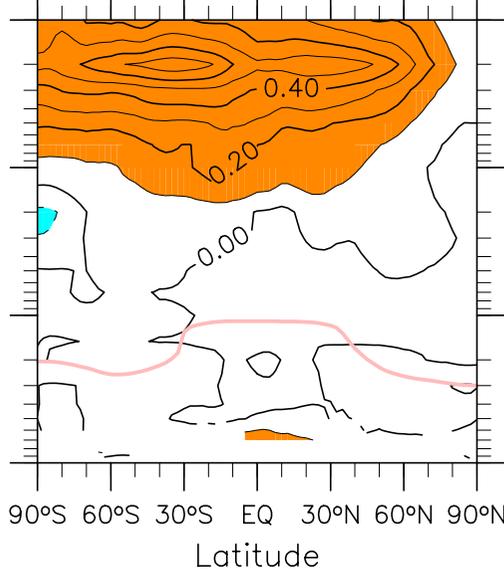
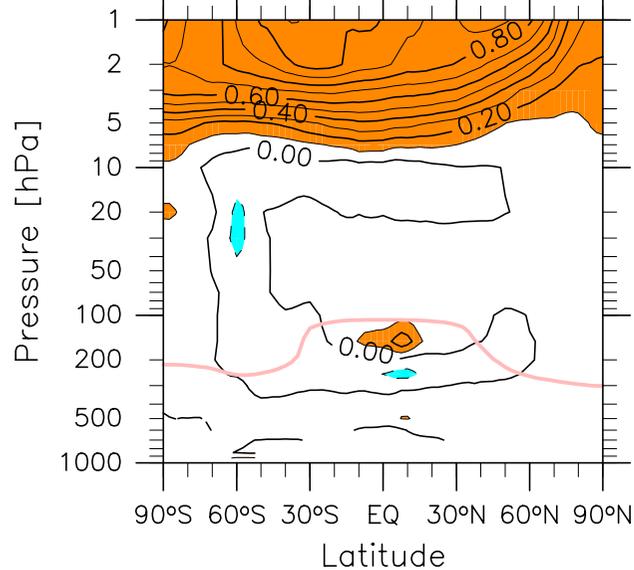
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



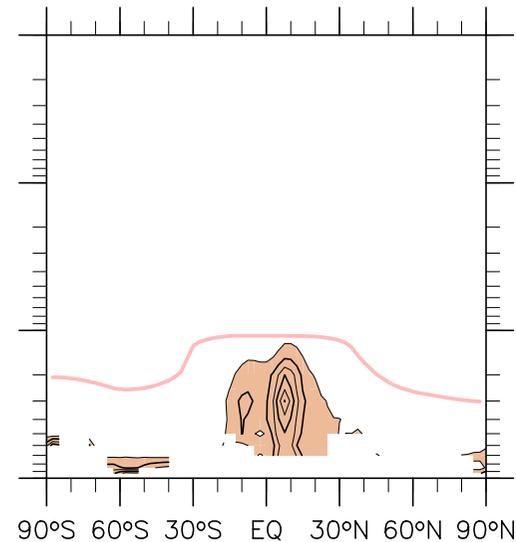
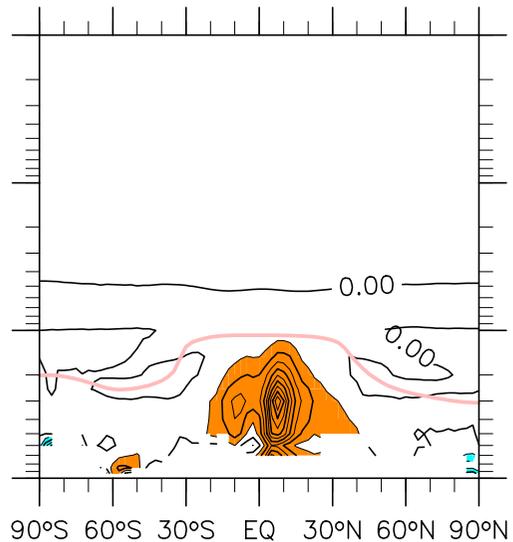
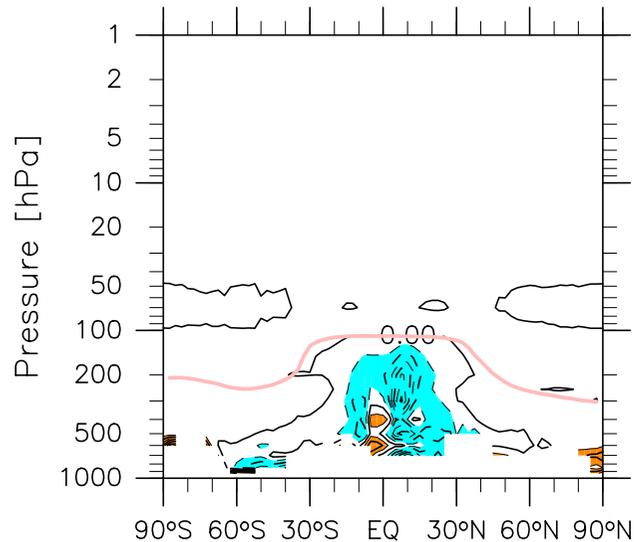
$Q_{total} - Q_{rad}$ [K/d]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

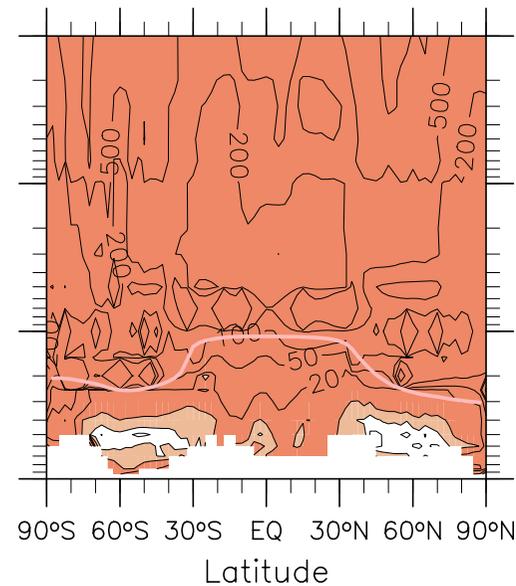
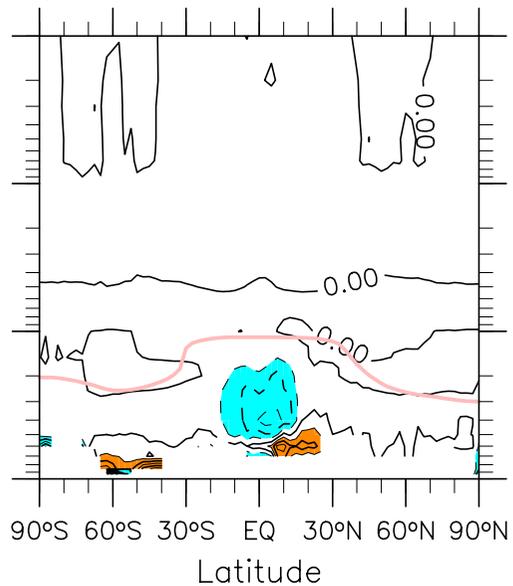
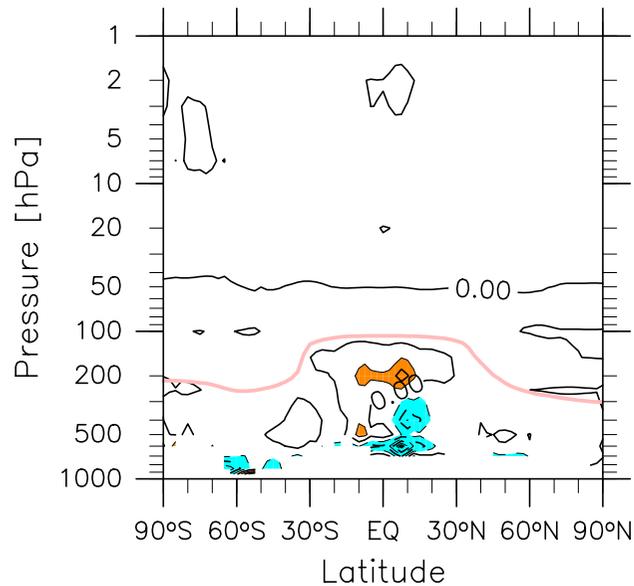
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) $(SD / |REM|) \times 100\%$



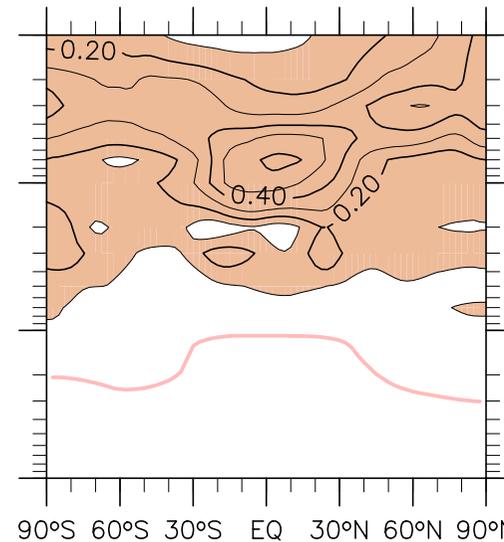
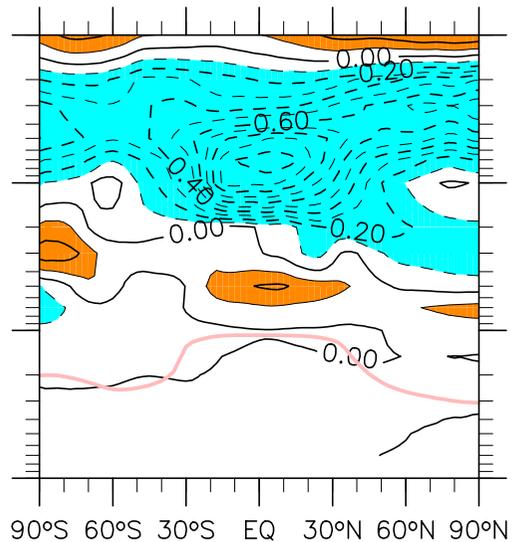
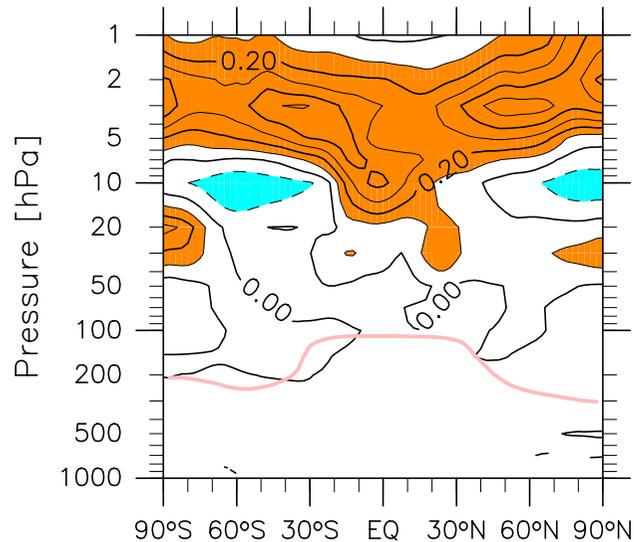
Ozone [ppmv]

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

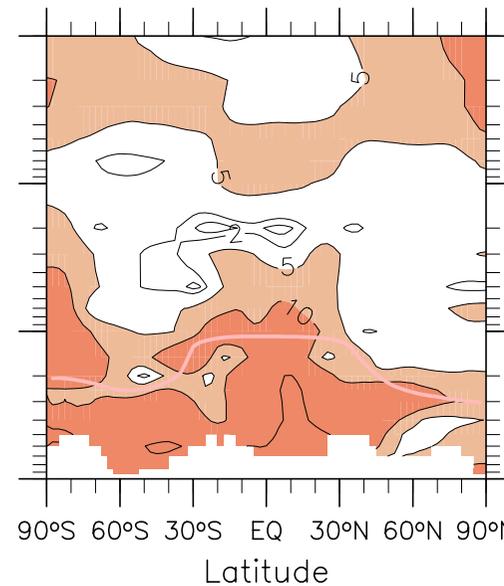
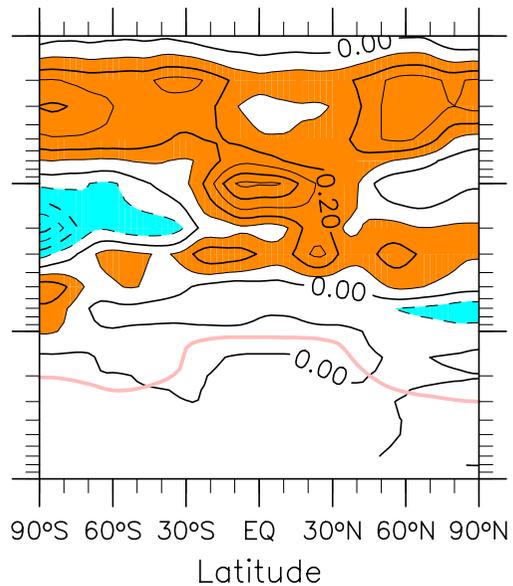
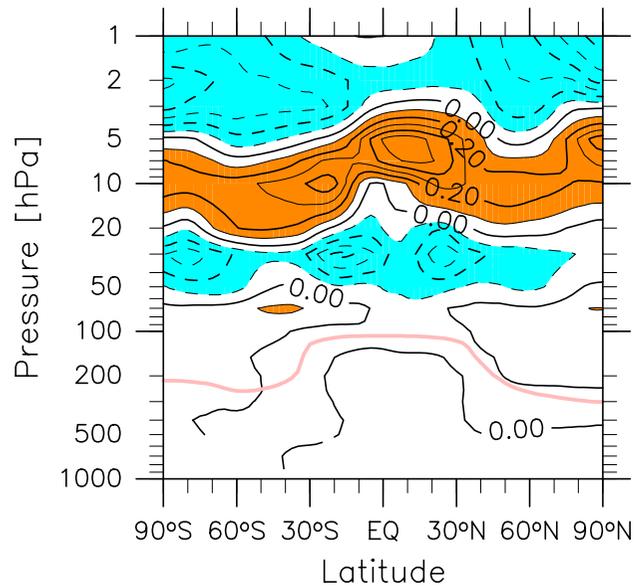
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



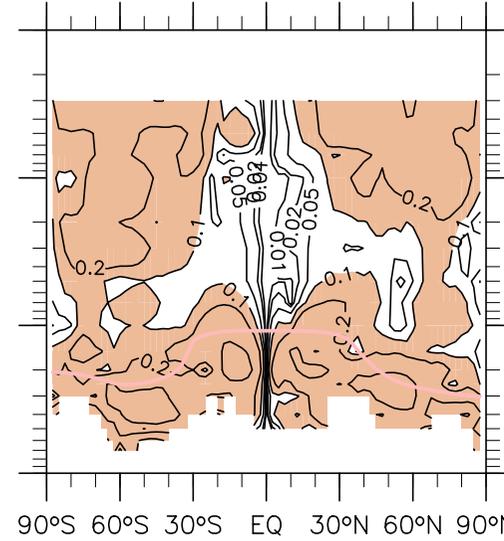
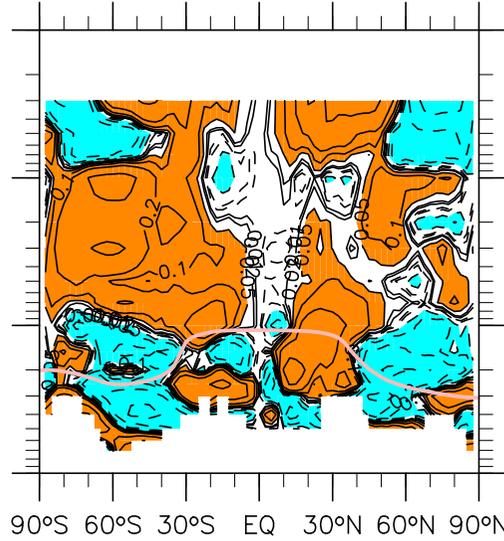
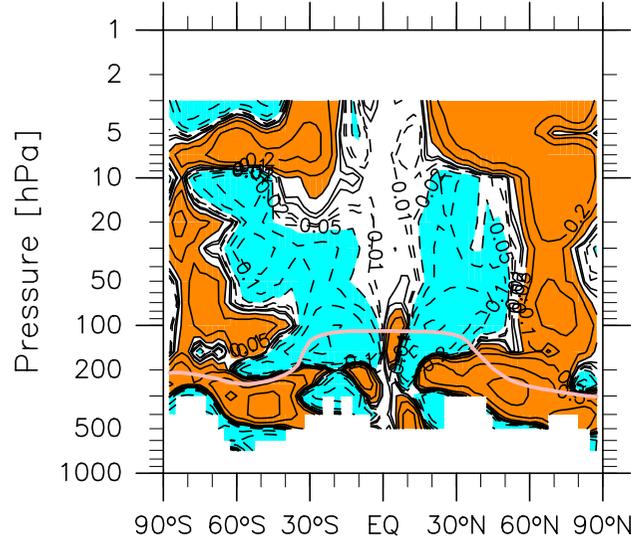
+fv*

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

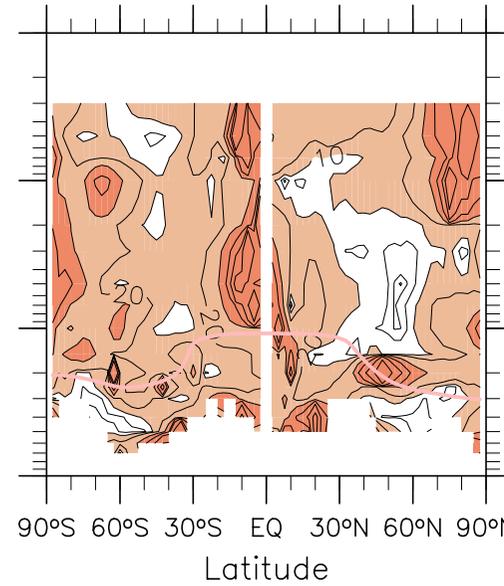
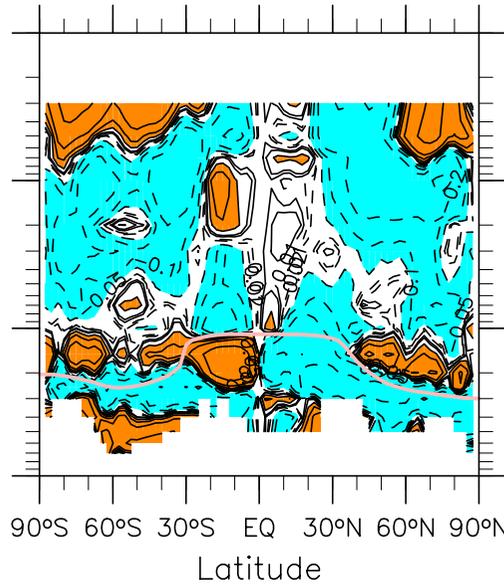
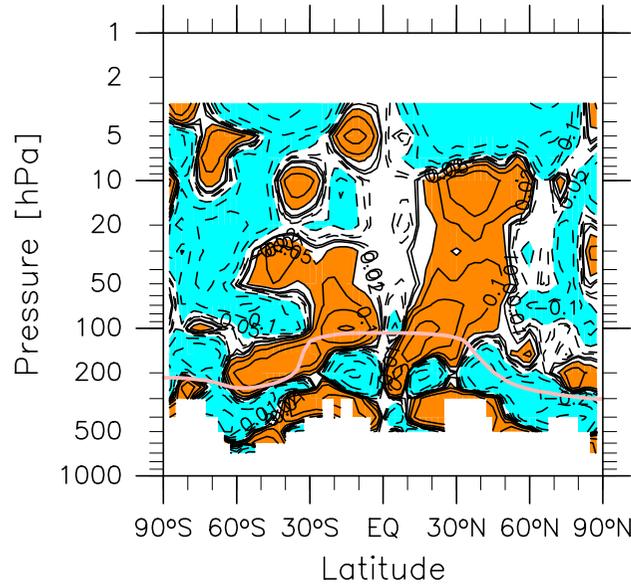
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



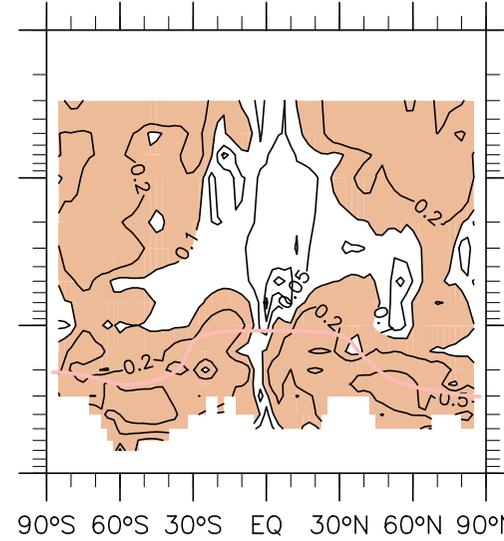
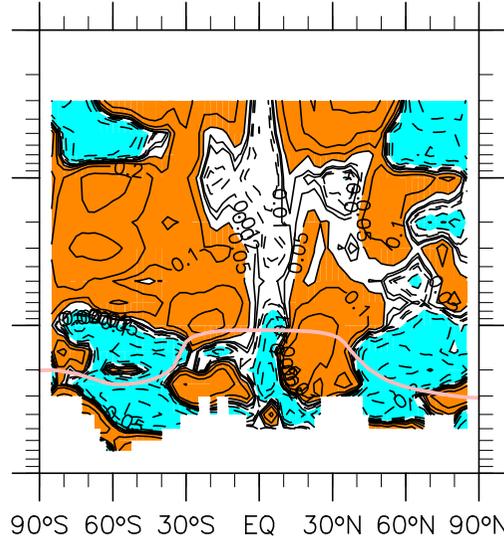
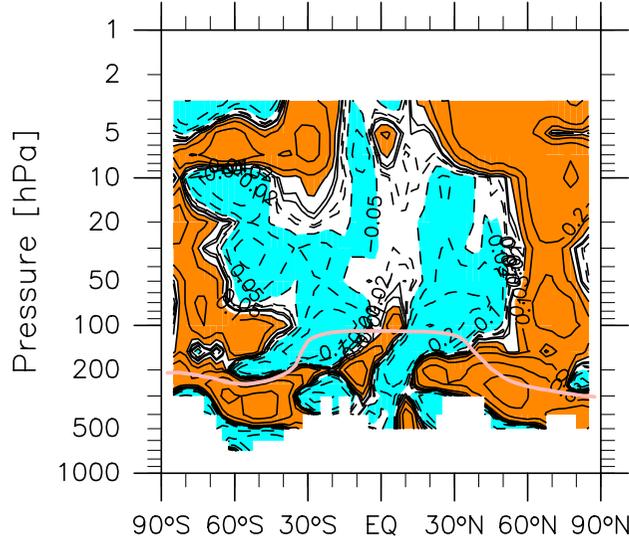
$$+fv^* - v^* \partial u / \partial y - \omega^* \partial u / \partial p$$

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

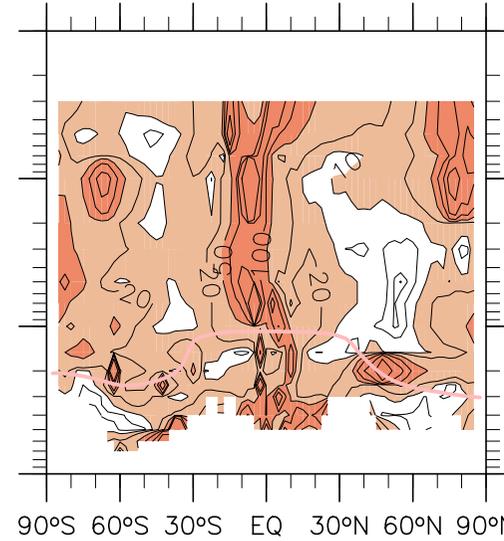
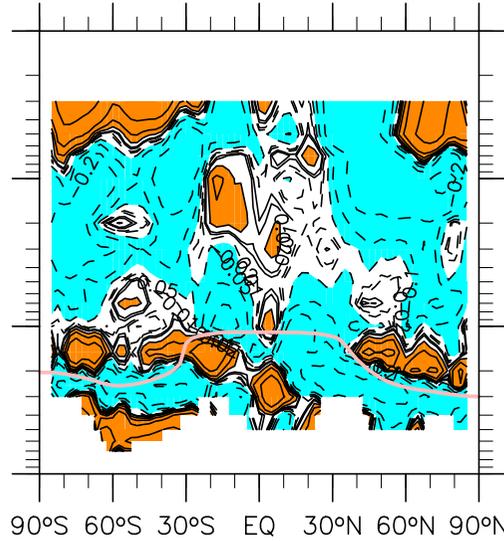
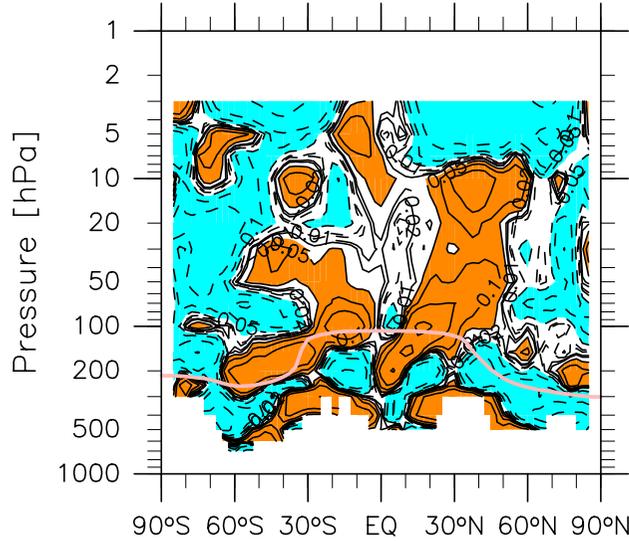
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



Latitude

Latitude

Latitude

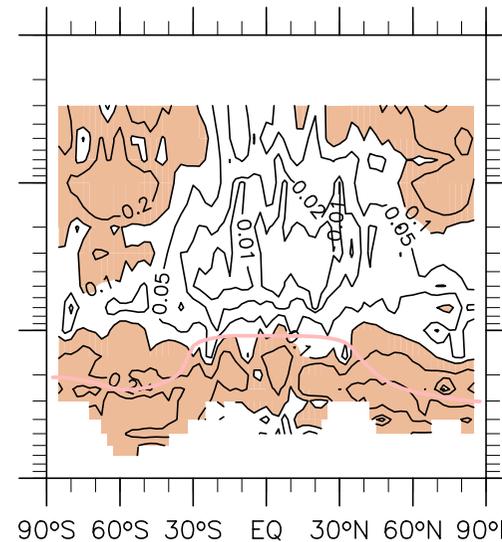
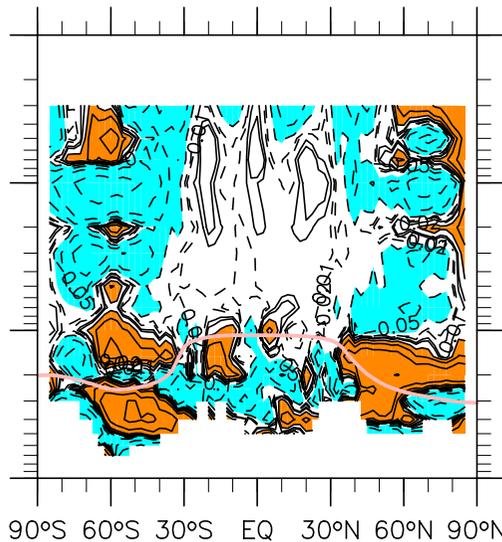
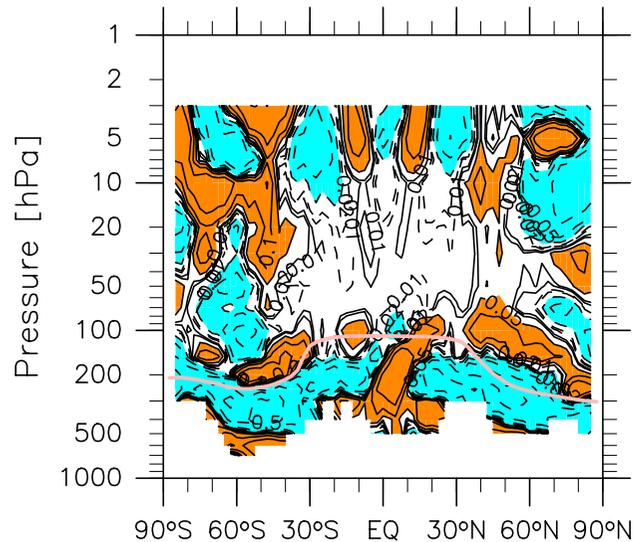
EPFD

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

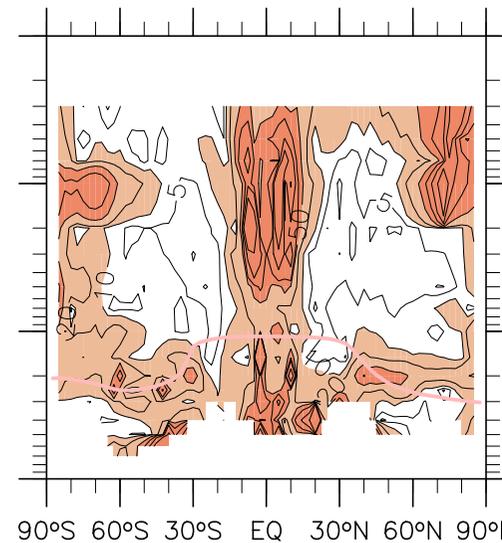
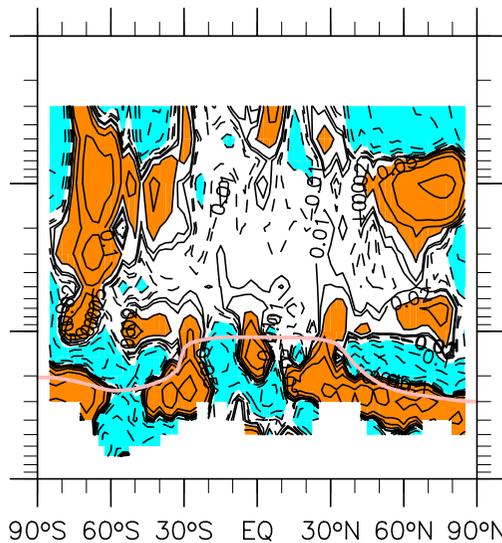
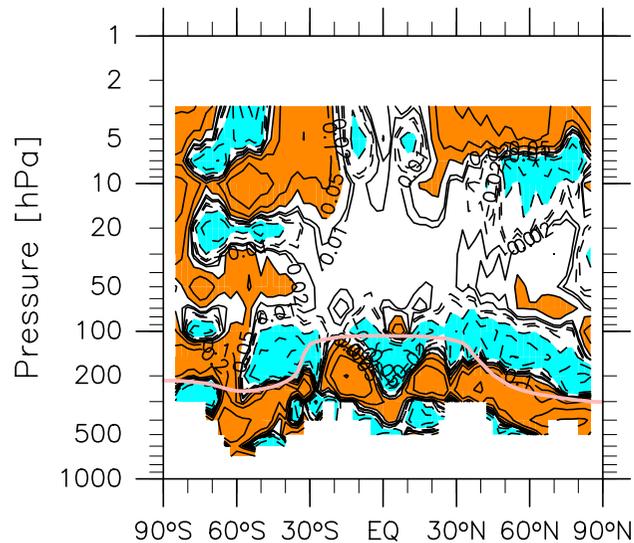
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



Latitude

Latitude

Latitude

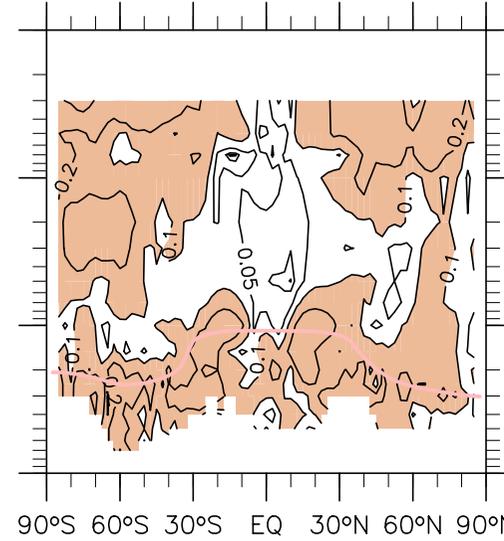
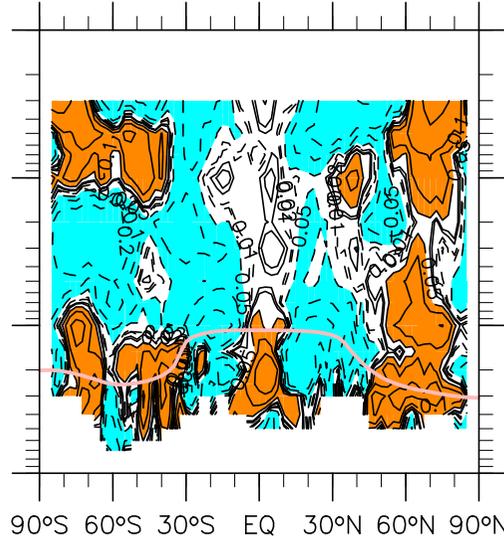
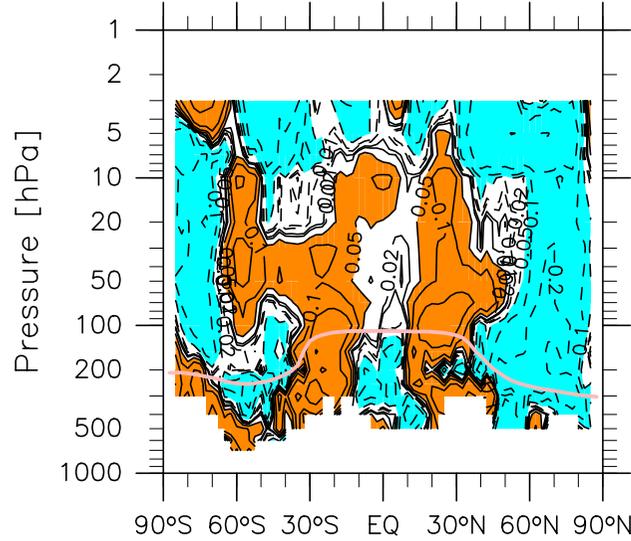
Residual_u

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

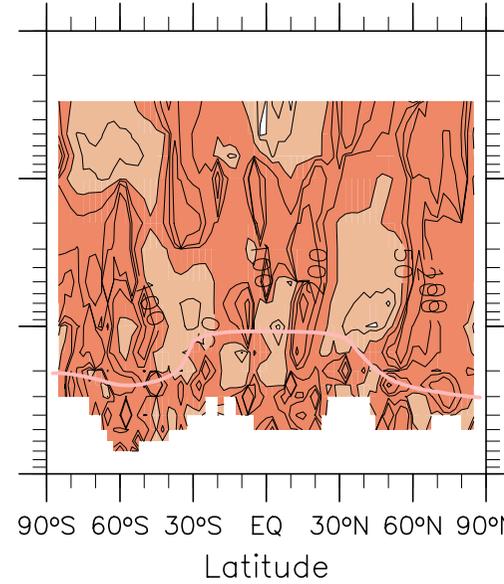
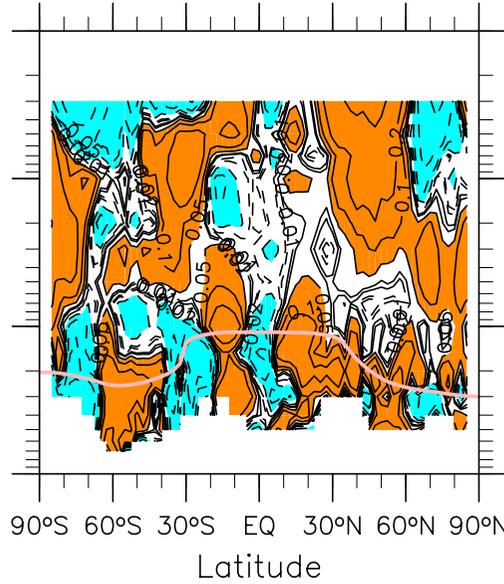
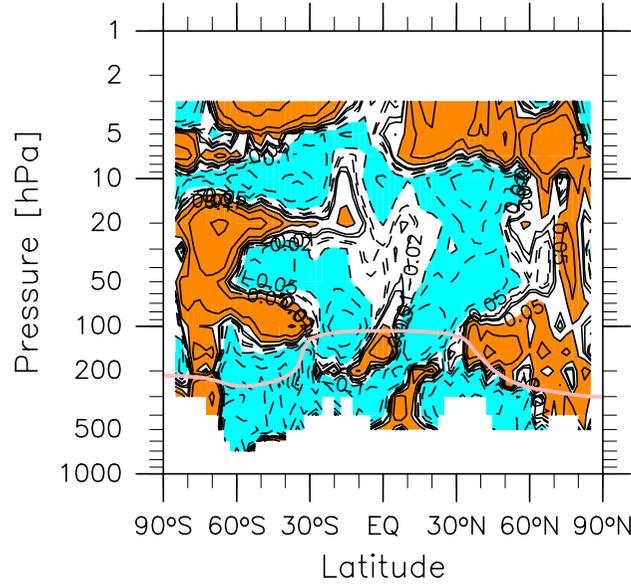
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



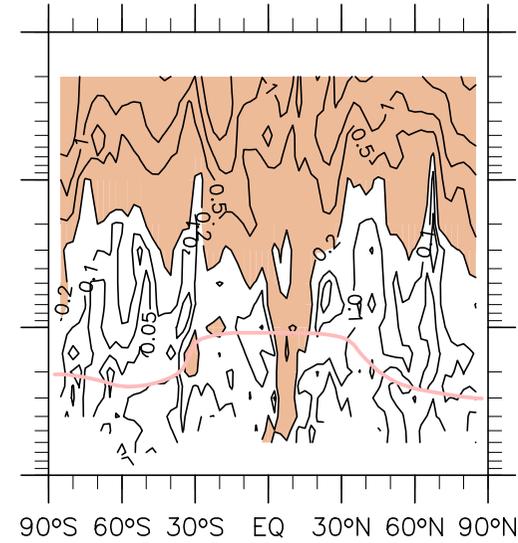
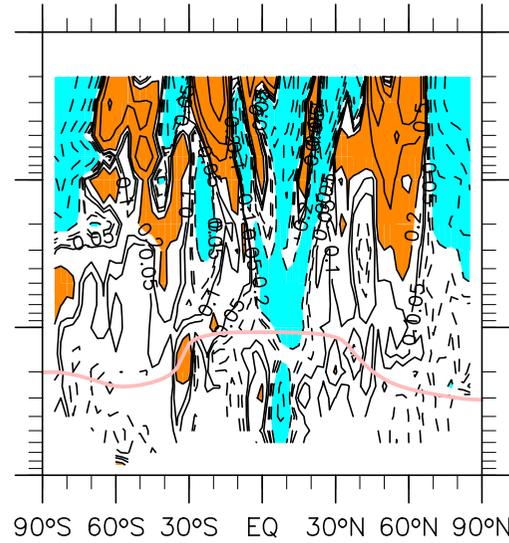
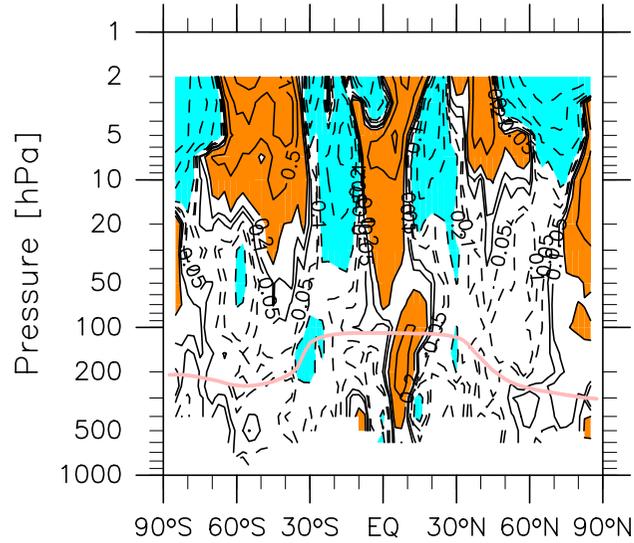
$$-\omega^* \partial\theta/\partial p$$

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

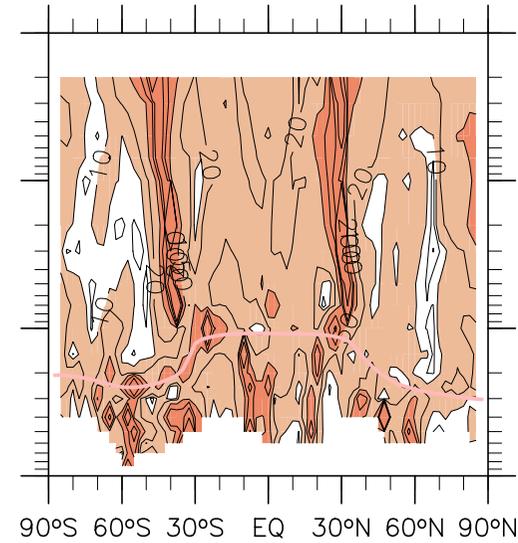
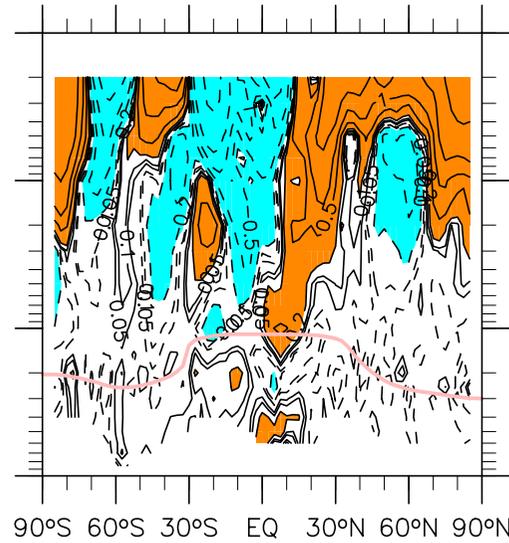
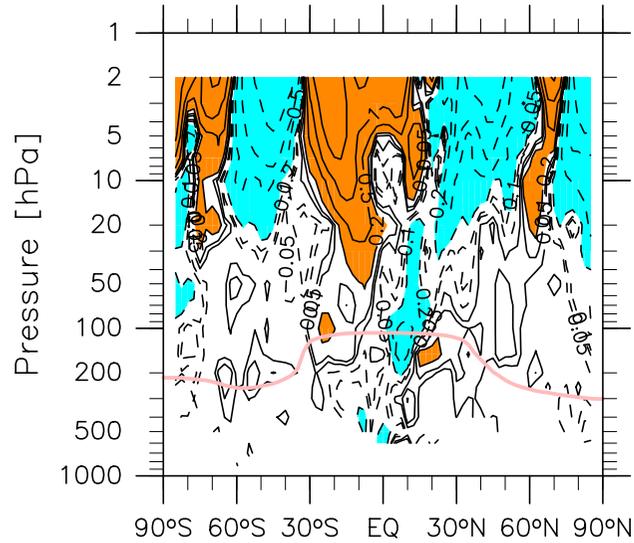
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



Latitude

Latitude

Latitude

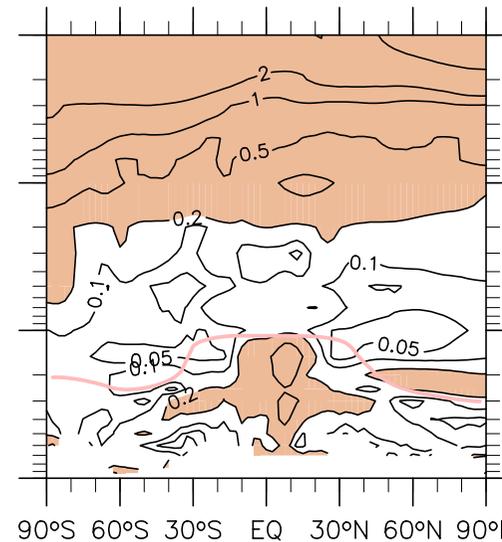
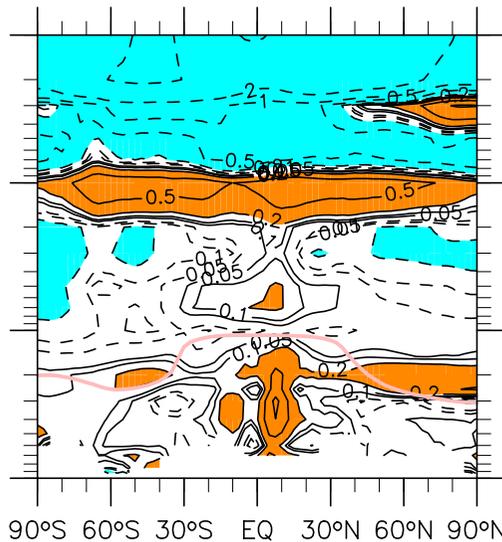
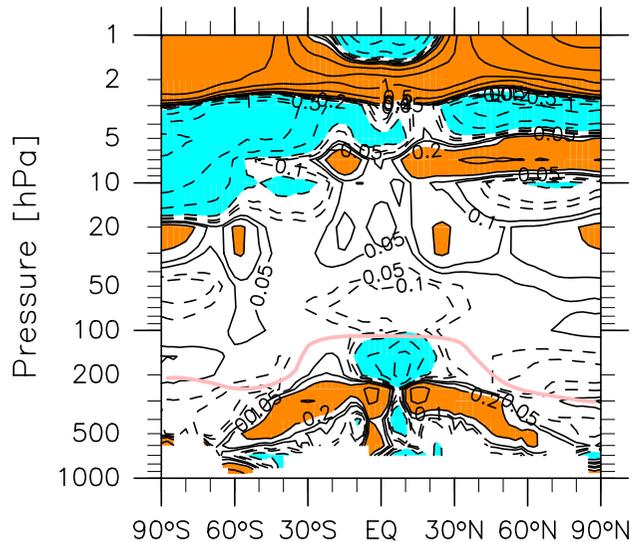
Q_{total}

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

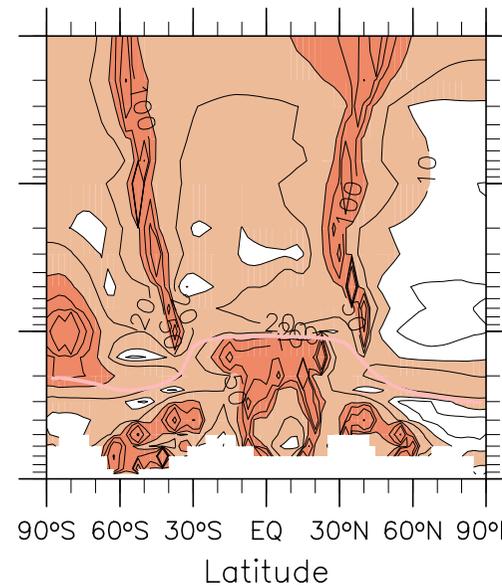
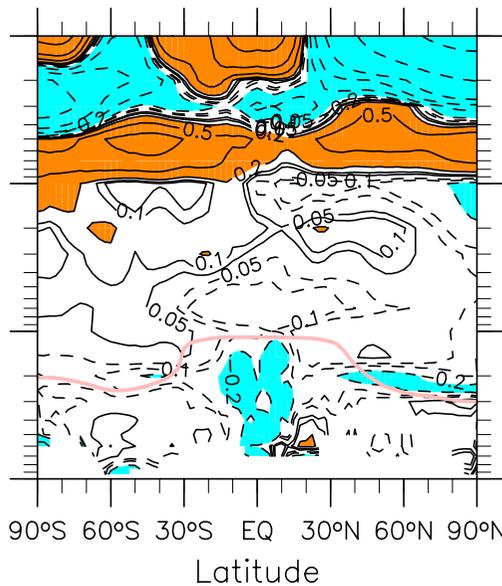
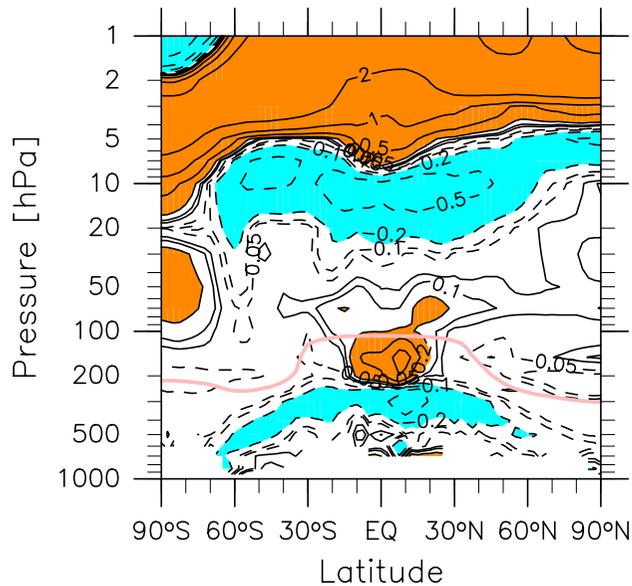
(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%



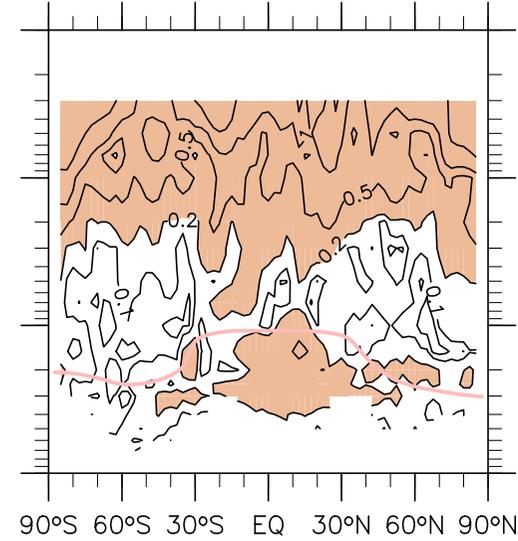
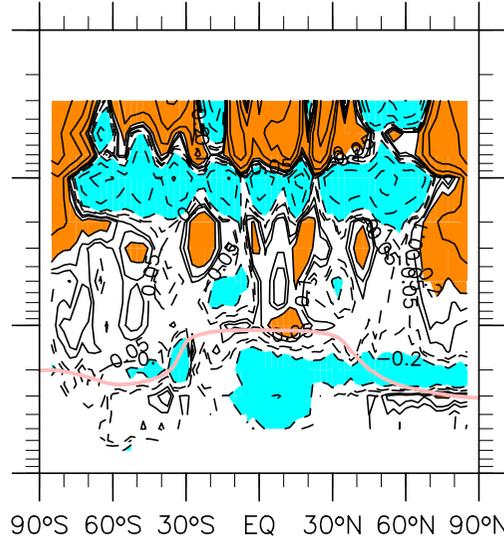
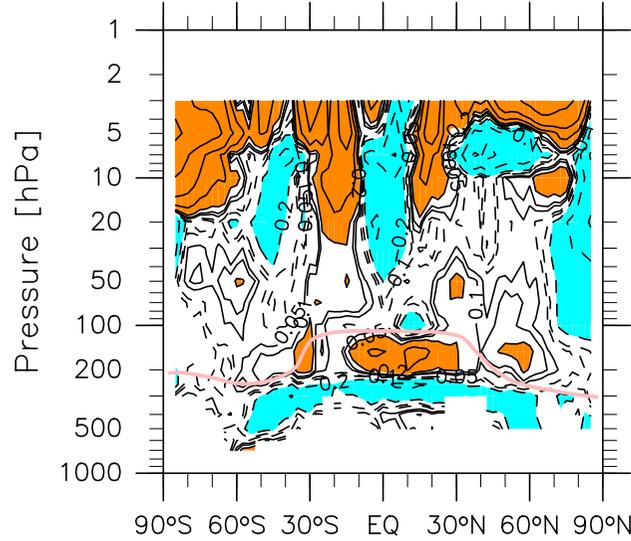
Residual_Θ

SON (81-10)

(a) MERRA-2 - REM

(b) JRA-55 - REM

(e) SD



(c) ERA-Int - REM

(d) CFSR - REM

(f) (SD / | REM |) x 100%

