

DJF (D80–F10)

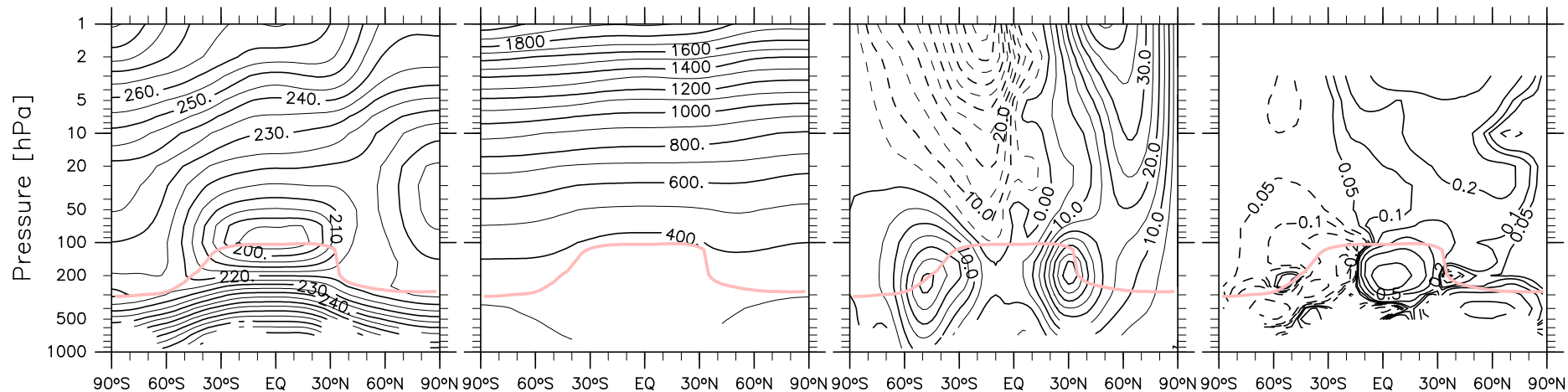
MERRA-2

(a) T [K]

(b) Θ [K]

(c) u [m/s]

(d) v_{res} [m/s]

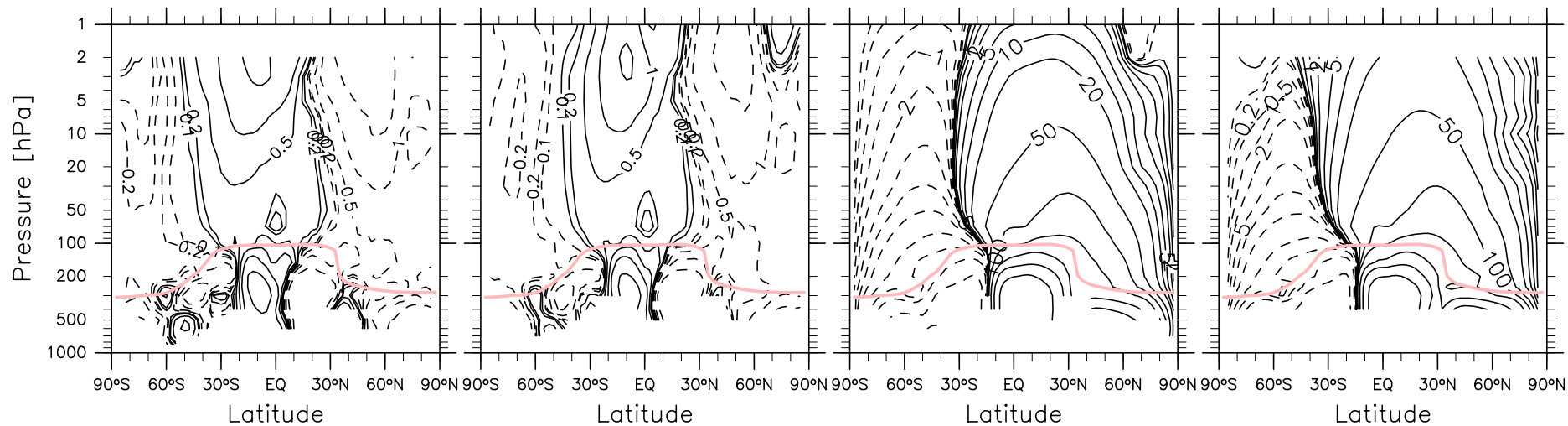


(e) w_{res} [mm/s]

(f) w_{res} from Ψ_{vres} [mm/s]

(g) Ψ_{vres} [kg/m/s]

(h) Ψ_{wres} [kg/m/s]



DJF (D80–F10)

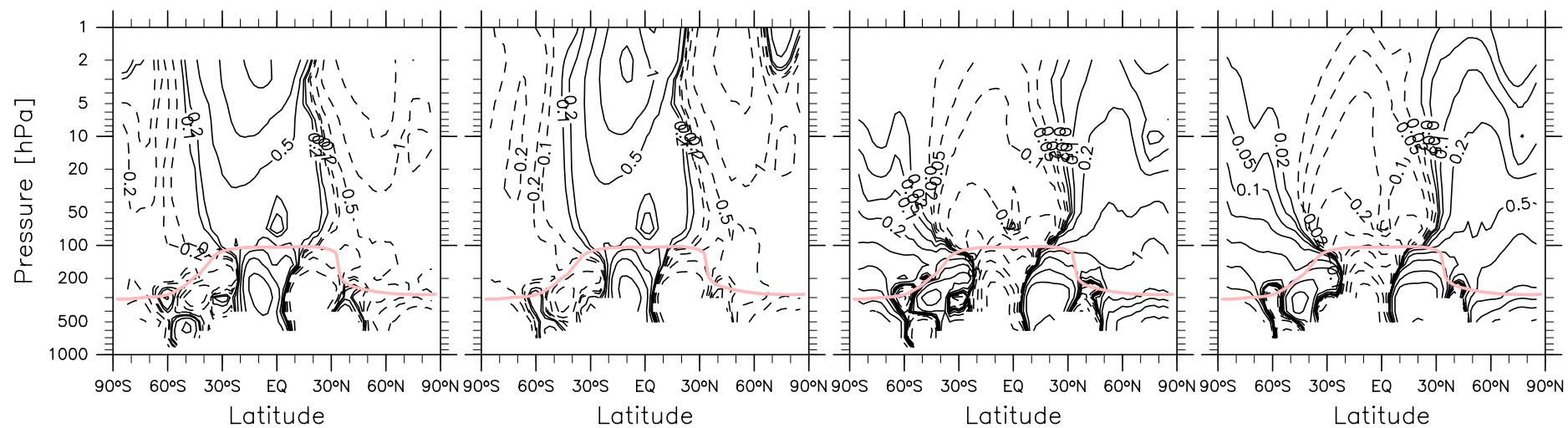
MERRA-2

(a) w_{res} [mm/s]

(b) w_{res} from ψ_{vres} [mm/s]

(c) ω_{res} [mPa/s]

(d) ω_{res} from ψ_{vres} [mPa/s]



DJF (D80–F10)

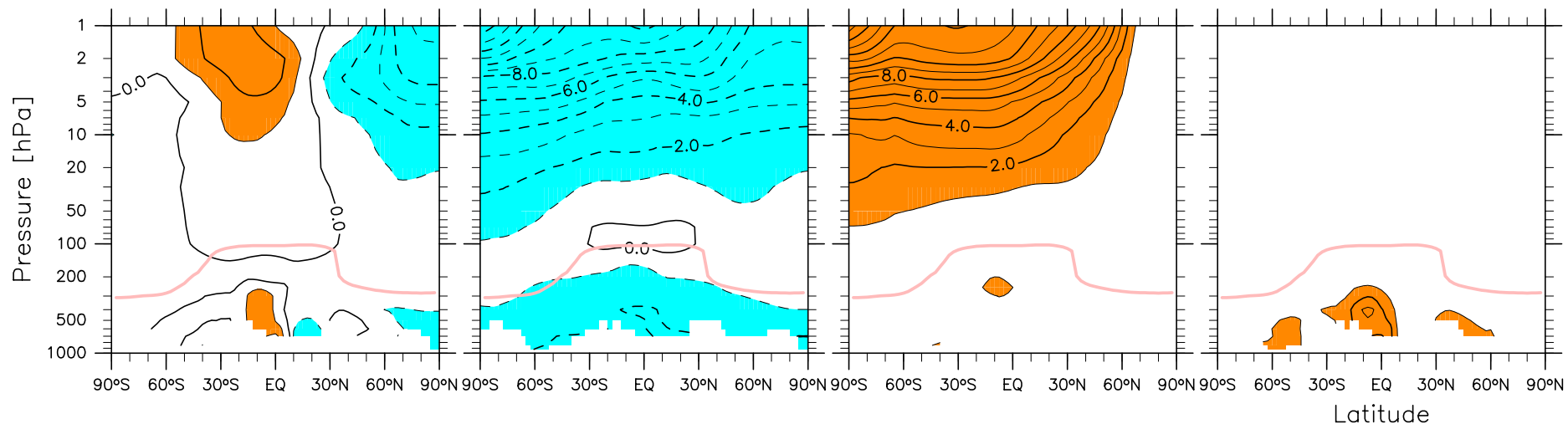
MERRA-2

(a) Q_{total} [K/d]

(b) Q_{longwave} [K/d]

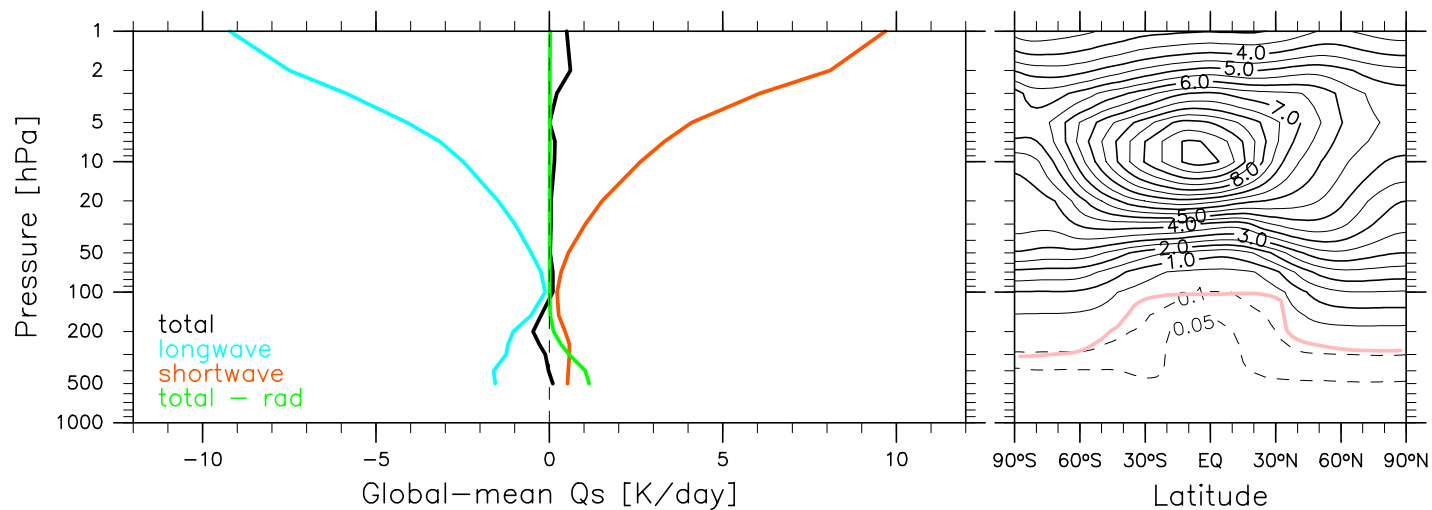
(c) $Q_{\text{shortwave}}$ [K/d]

(d) $Q_{\text{total}} - Q_{\text{rad}}$ [K/d]



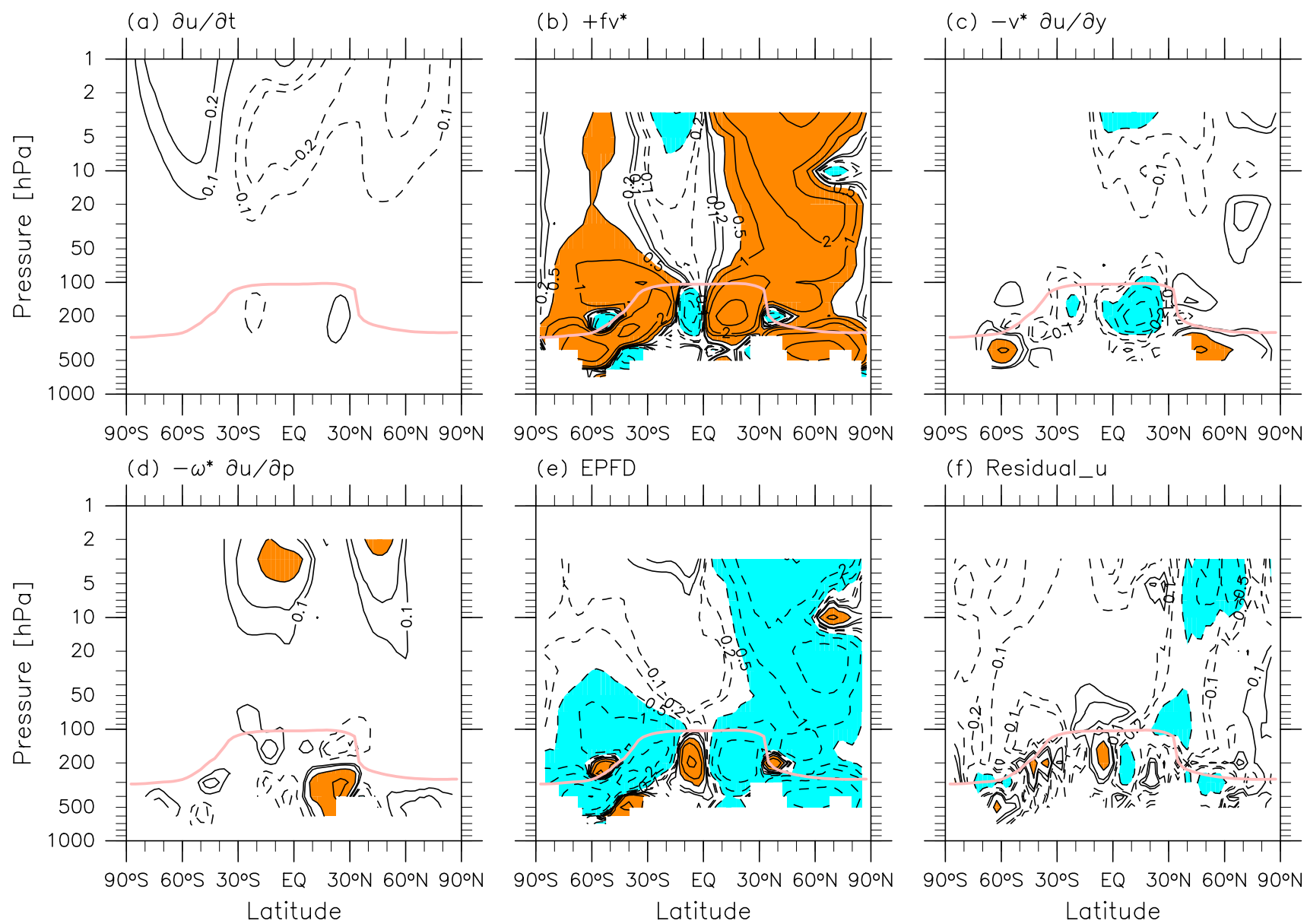
(e) Global-mean Q_s [K/d]

(f) Ozone [ppmv]



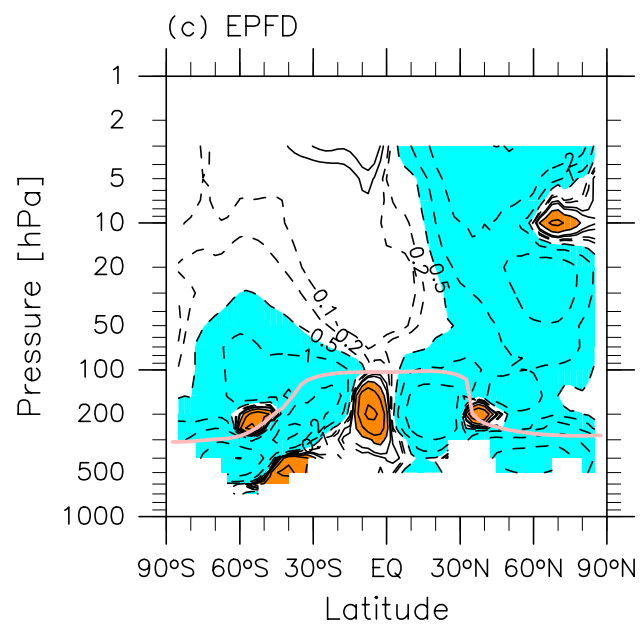
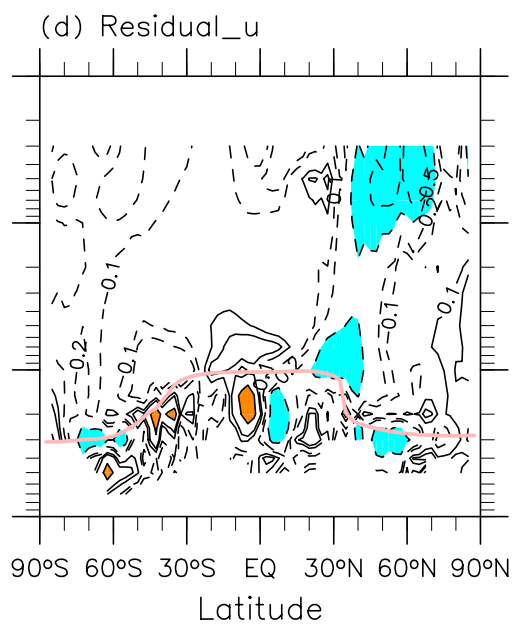
DJF (D80–F10)

MERRA-2



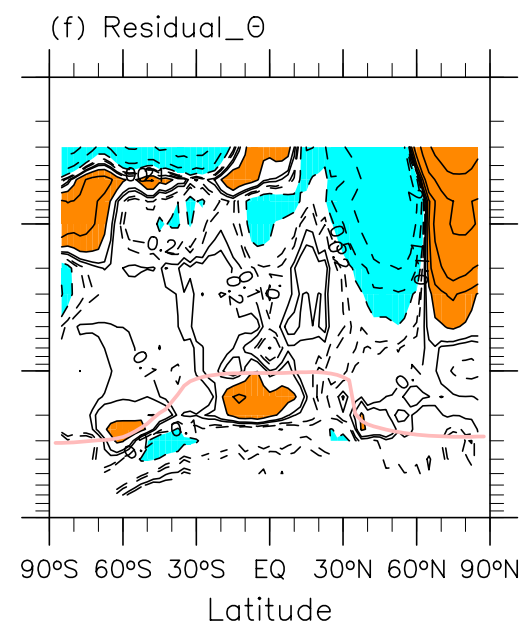
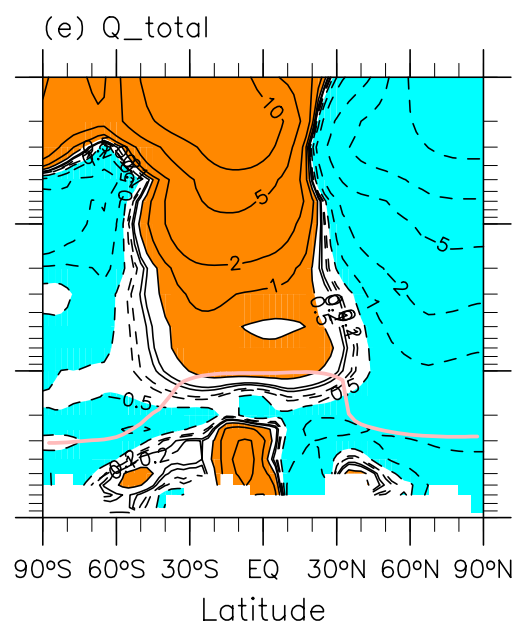
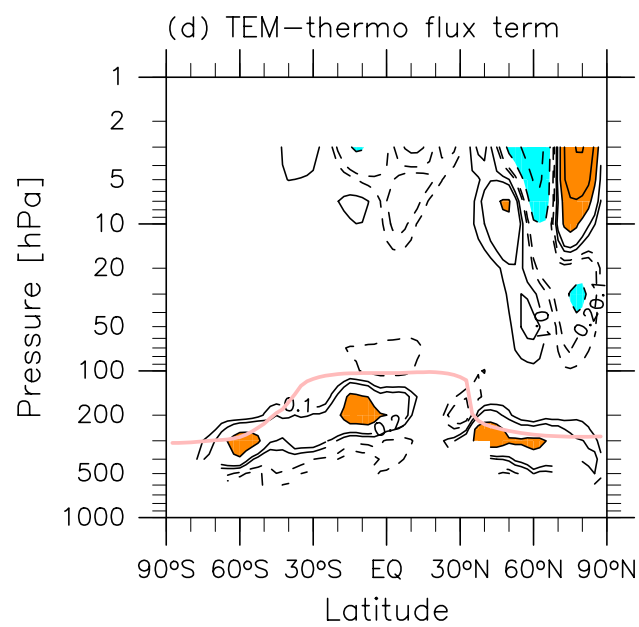
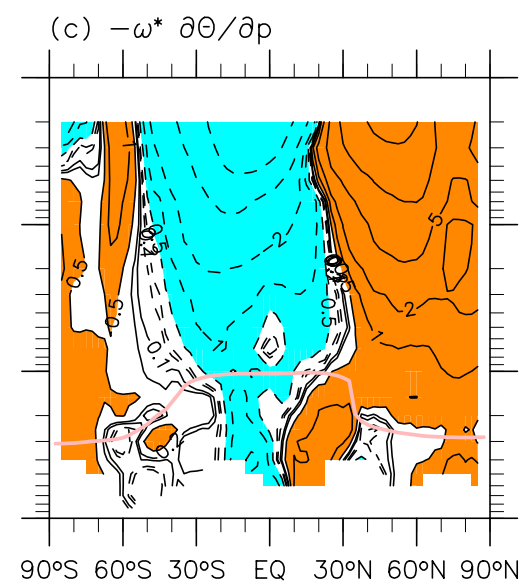
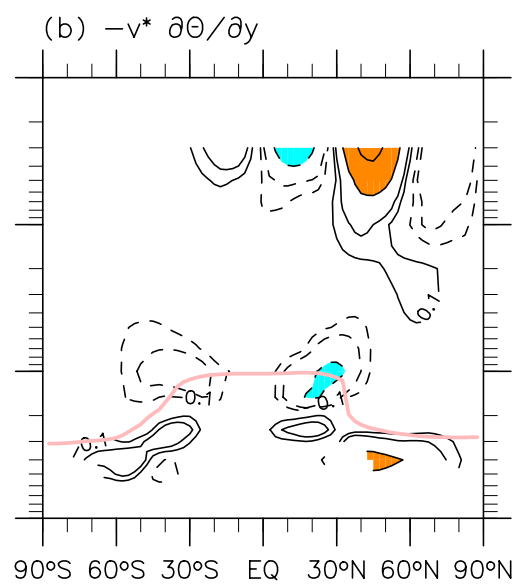
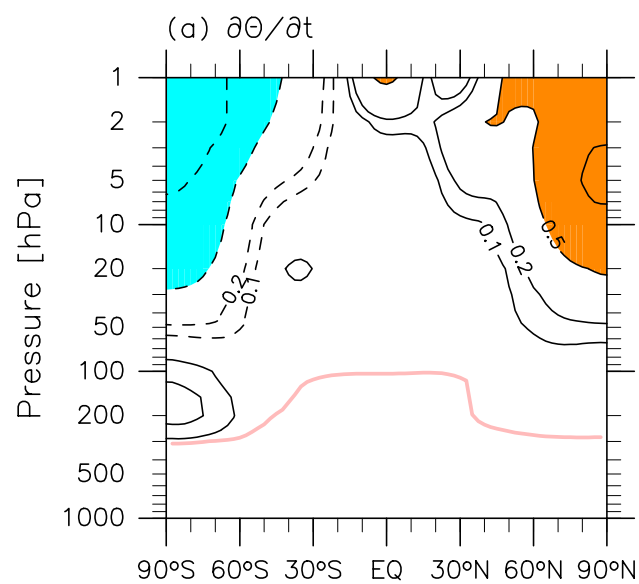
(a) $\partial u / \partial t$

(a) $\partial u / \partial t$


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


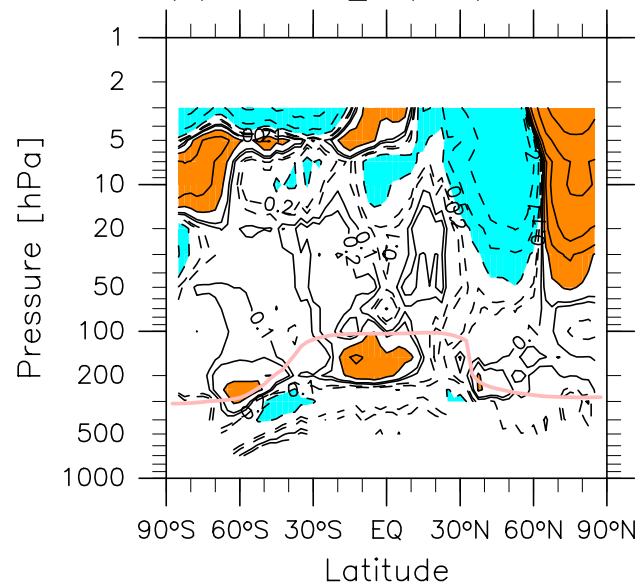
DJF (D80–F10)

MERRA-2

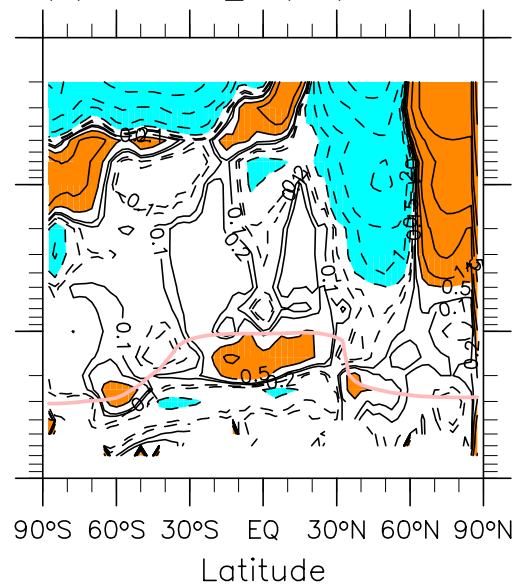


DJF (D80–F10)

(a) Residual_ Θ (TEM)



(b) Residual_ Θ (EM)



MERRA-2

(c) difference (TEM minus EM)

