MAM (81–10)   MERRA–2
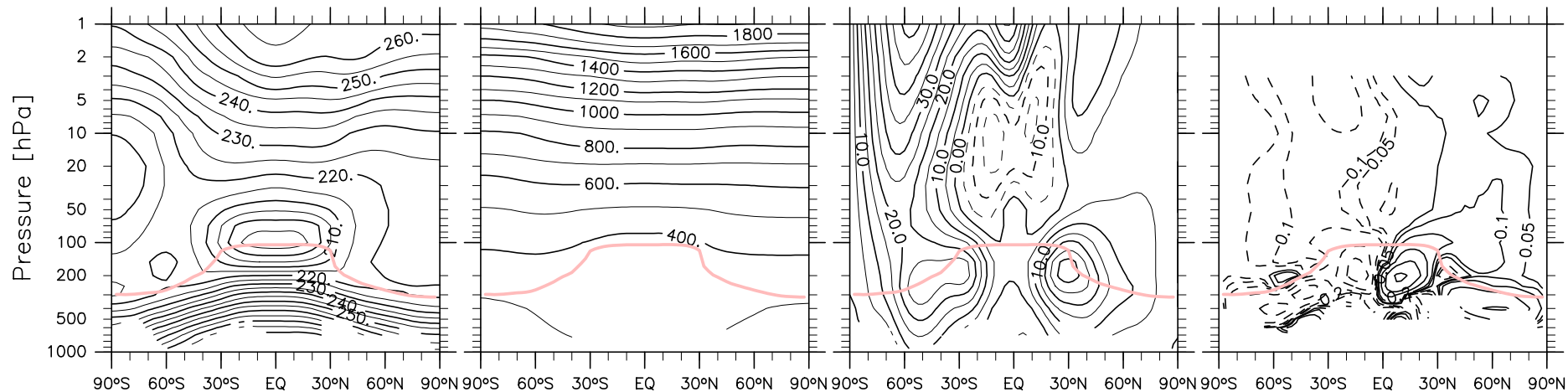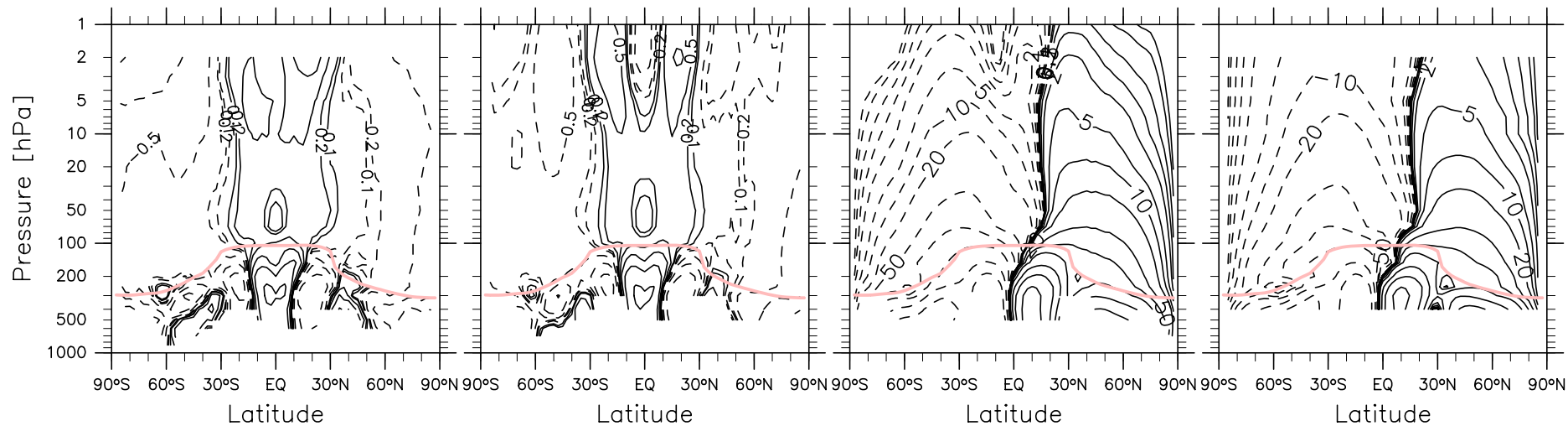
(a) T [K]   (b) Θ [K]   (c) u [m/s]   (d) v_{res} [m/s]

(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]

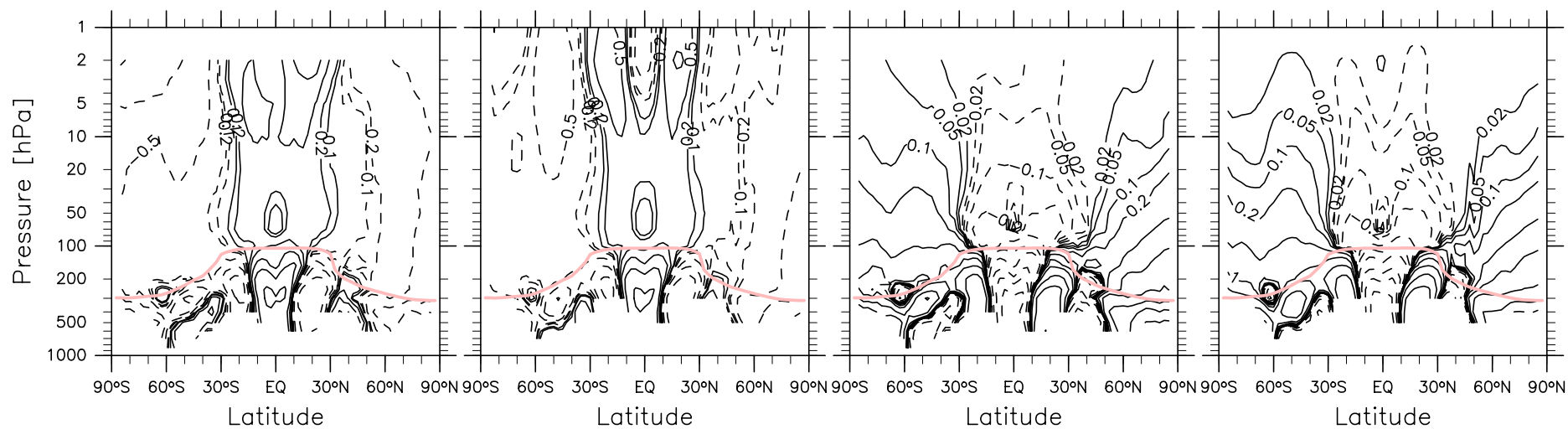MAM (81-10)   MERRA-2

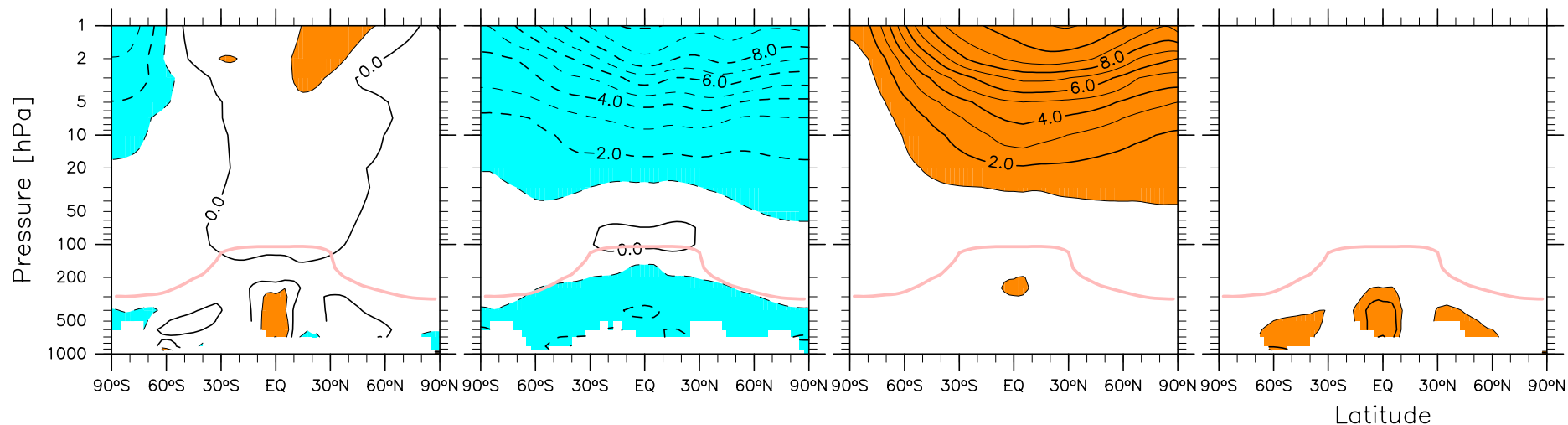(a) w_{res} [mm/s]   (b) w_{res} from Ψ_{vres} [mm/s]   (c) ω_{res} [mPa/s]   (d) ω_{res} from Ψ_{vres} [mPa/s]

MAM (81–10)   MERRA−2
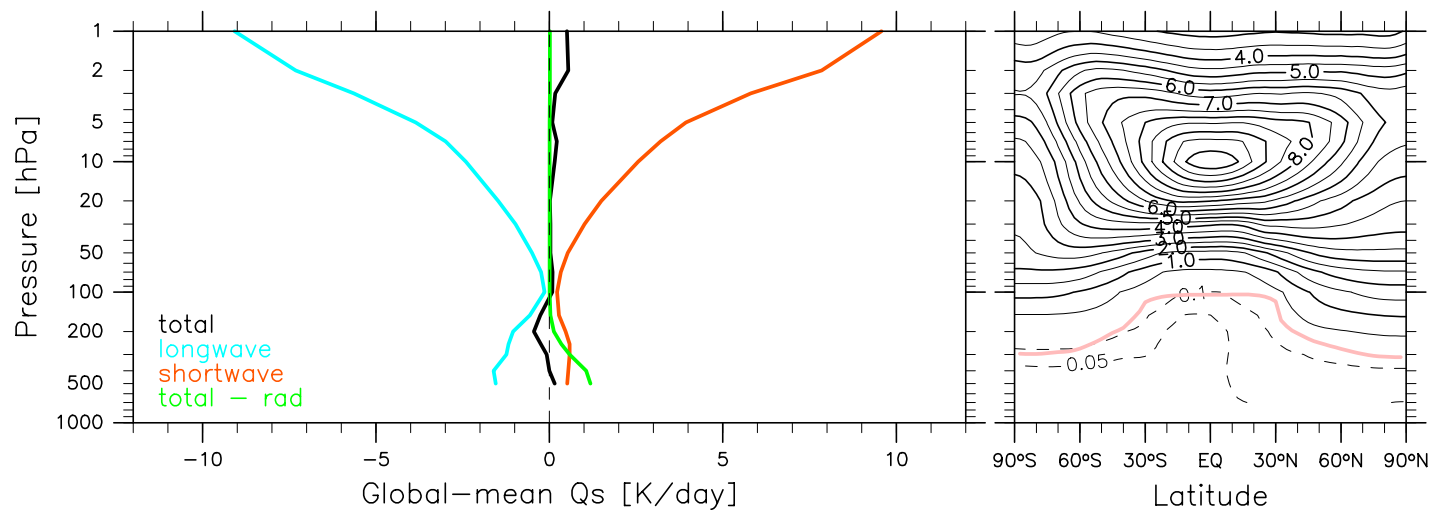
(a) Q_total [K/d]   (b) Q_longwave [K/d]   (c) Q_shortwave [K/d]   (d) Q_total − Q_rad [K/d]

(e) Global−mean Qs [K/d]   (f) Ozone [ppmv]

total
longwave
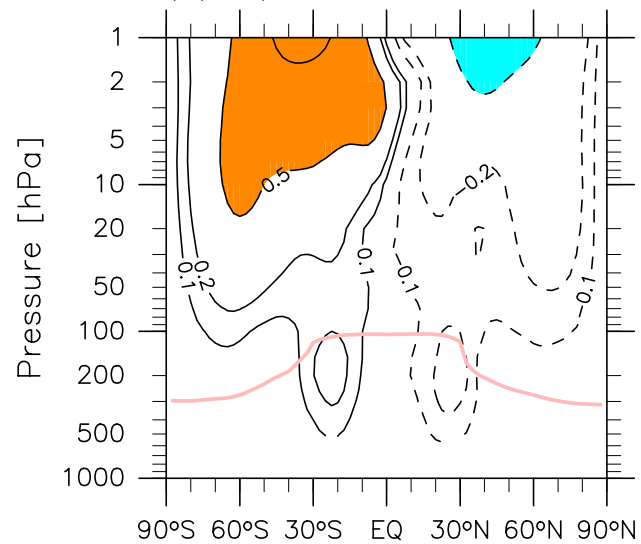shortwave
total − rad

MAM (81−10)   MERRA−2

(a) ∂u/∂t   (b) +fv*   (c) −v* ∂u/∂y
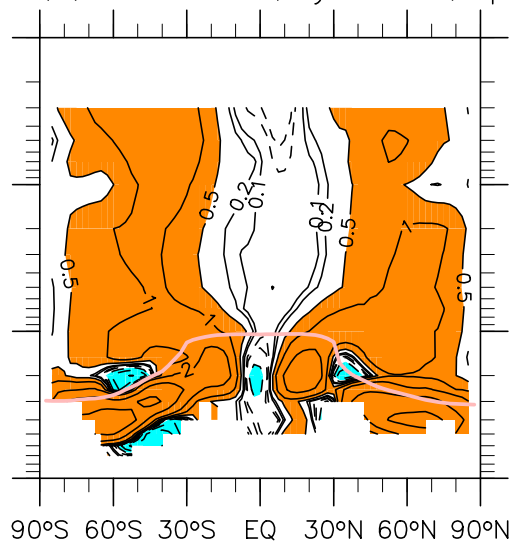
(d) −ω* ∂u/∂p   (e) EPFD   (f) Residual_u
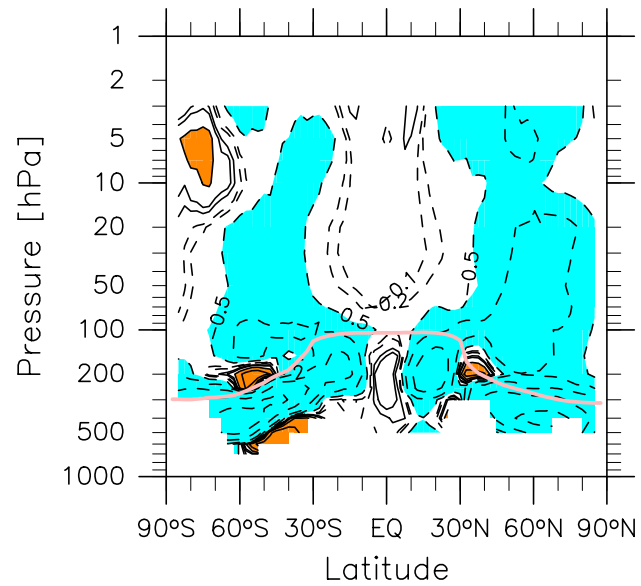
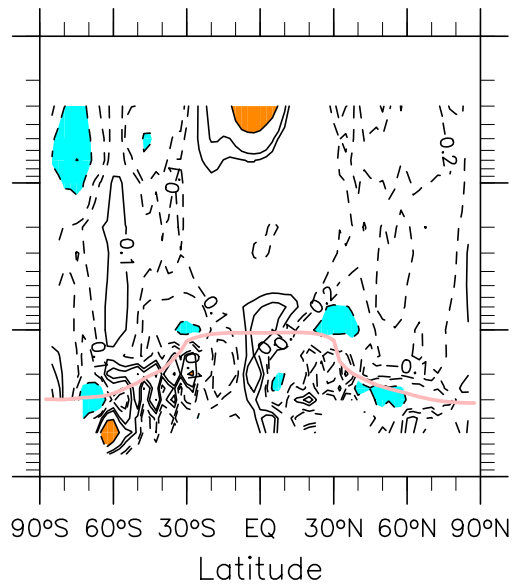MAM (81–10)

MERRA−2

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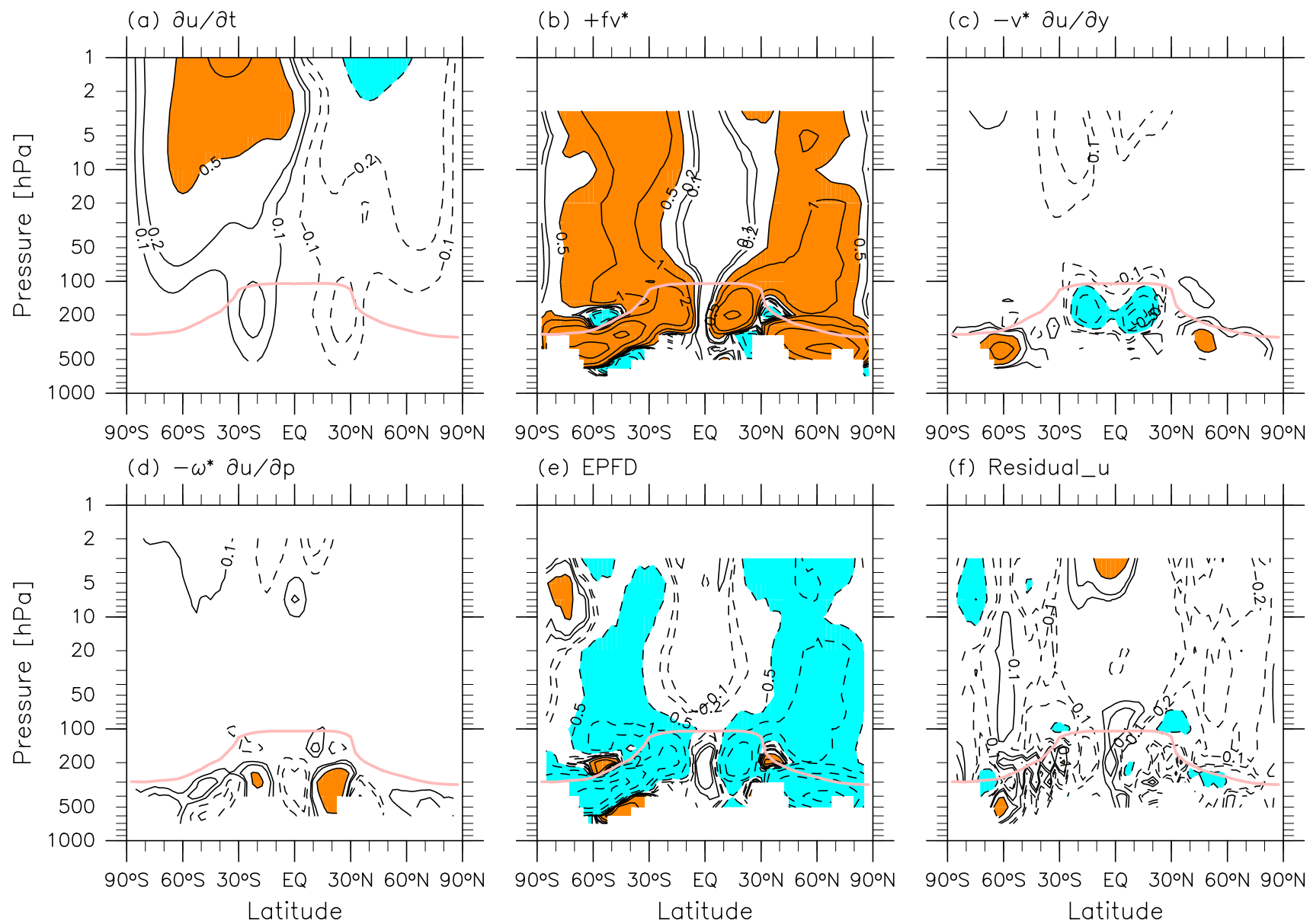
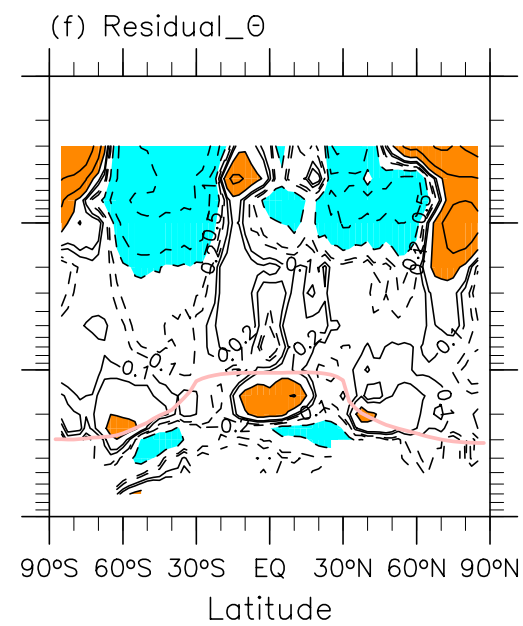(b) $+fv^* \ -v^* \ \partial u / \partial y \ -\omega^* \ \partial u / \partial p$

(c) EPFD
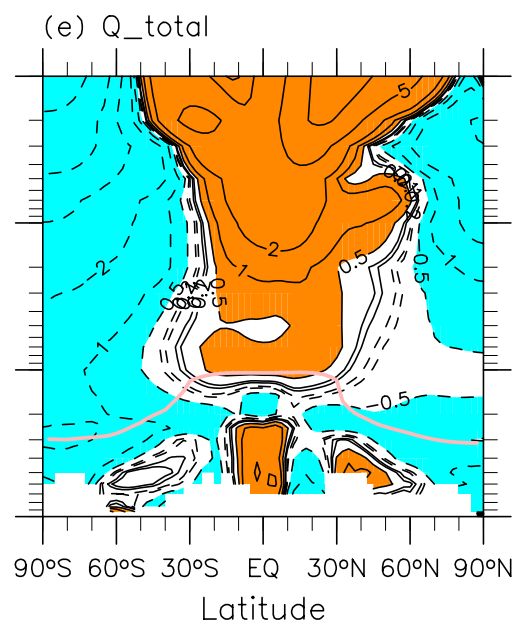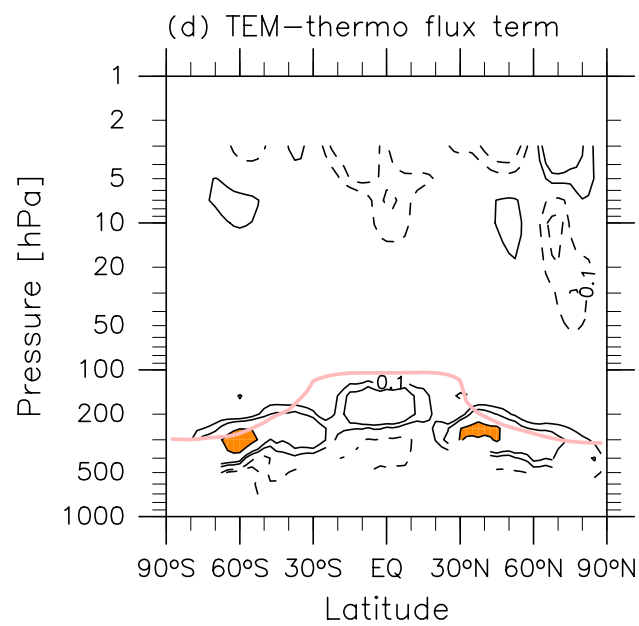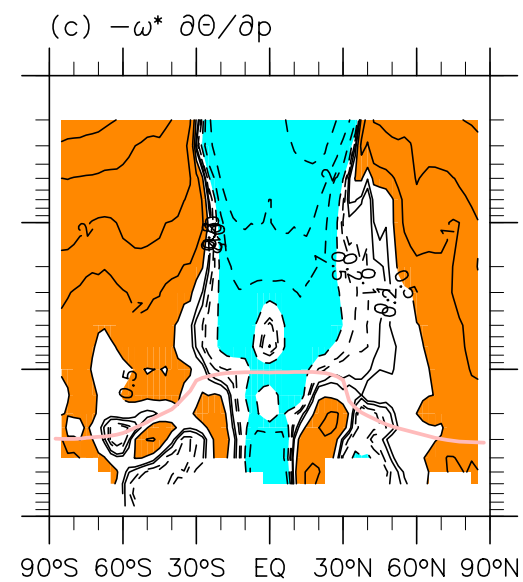
(d) Residual_u

Pressure [hPa]

Latitude

90ºS 60ºS 30ºS EQ 30ºN 60ºN 90ºN

MAM (81−10)   MERRA−2

(a) ∂Θ/∂t   (b) −v* ∂Θ/∂y   (c) −ω* ∂Θ/∂p

(d) TEM−thermo flux term   (e) Q_total   (f) Residual_Θ
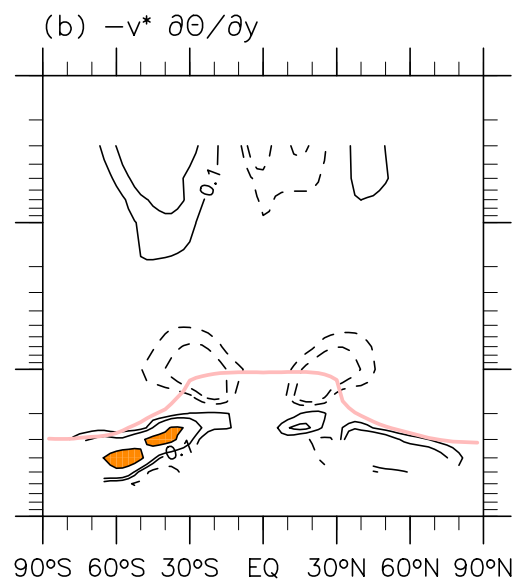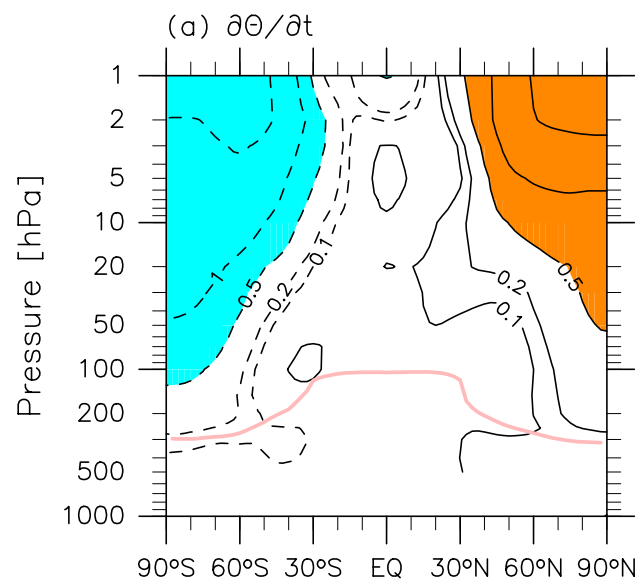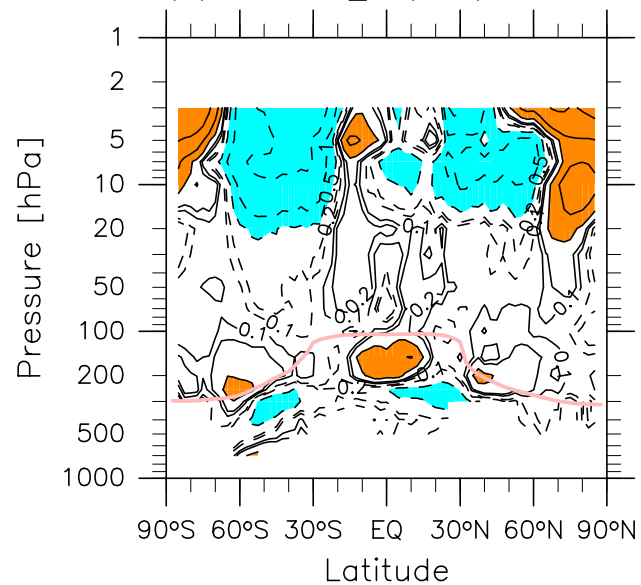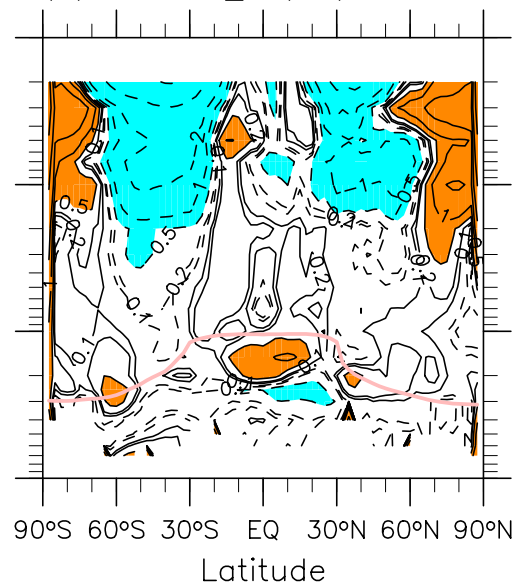
MAM (81−10)

MERRA−2

(a) Residual_Θ (TEM)

(b) Residual_Θ (EM)

(c) difference (TEM minus EM)