

JJA (81–10)

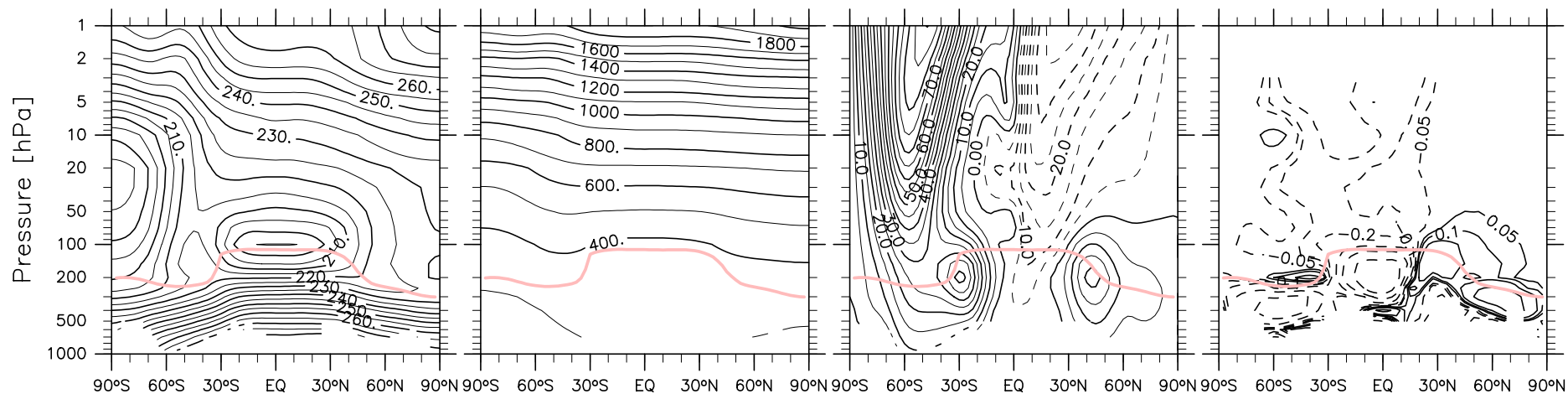
MERRA-2

(a)  $T$  [K]

(b)  $\Theta$  [K]

(c)  $u$  [m/s]

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

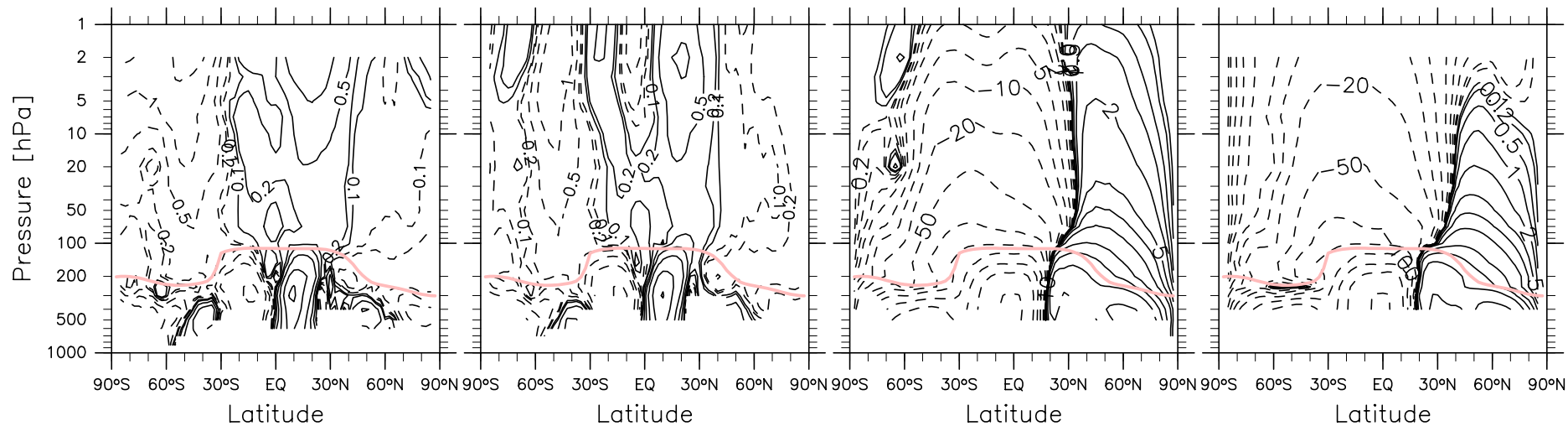


(e)  $w_{res}$  [mm/s]

(f)  $w_{res}$  from  $\Psi_{vres}$  [mm/s]

(g)  $\Psi_{vres}$  [kg/m/s]

(h)  $\Psi_{wres}$  [kg/m/s]



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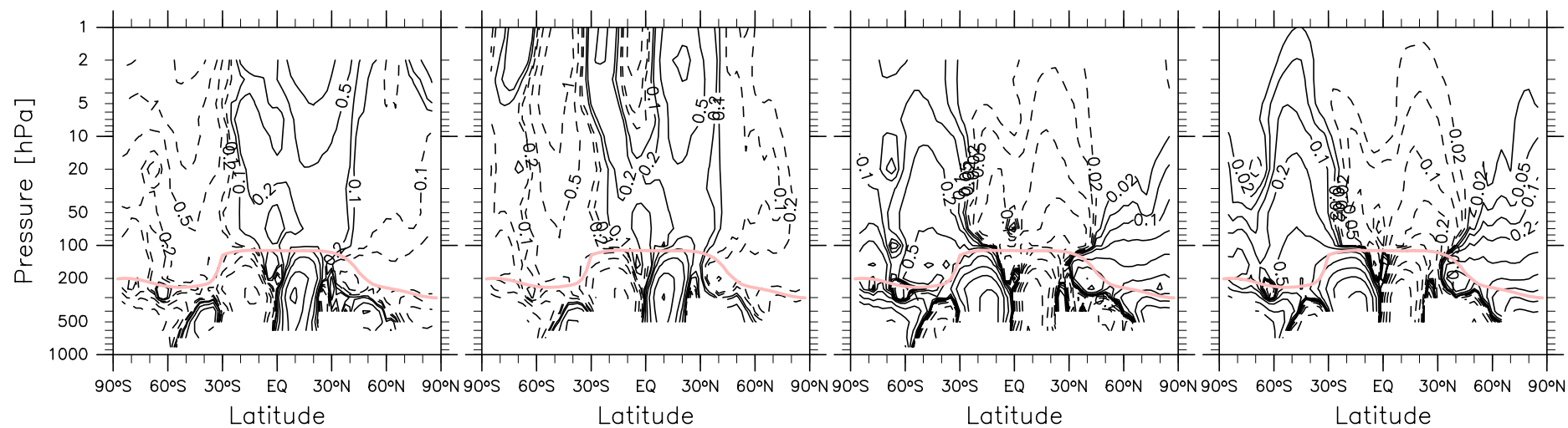
MERRA-2

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

(b)  $w_{\text{res}}$  from  $\psi_{\text{vres}}$  [mm/s]

(c)  $\omega_{\text{res}}$  [mPa/s]

(d)  $\omega_{\text{res}}$  from  $\psi_{\text{vres}}$  [mPa/s]



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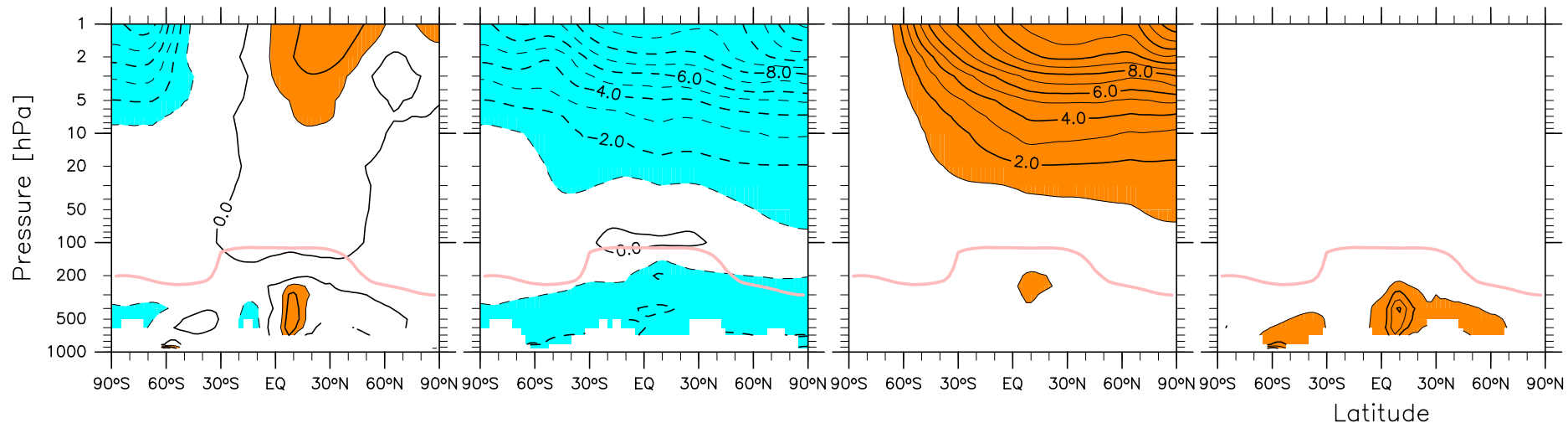
MERRA-2

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

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

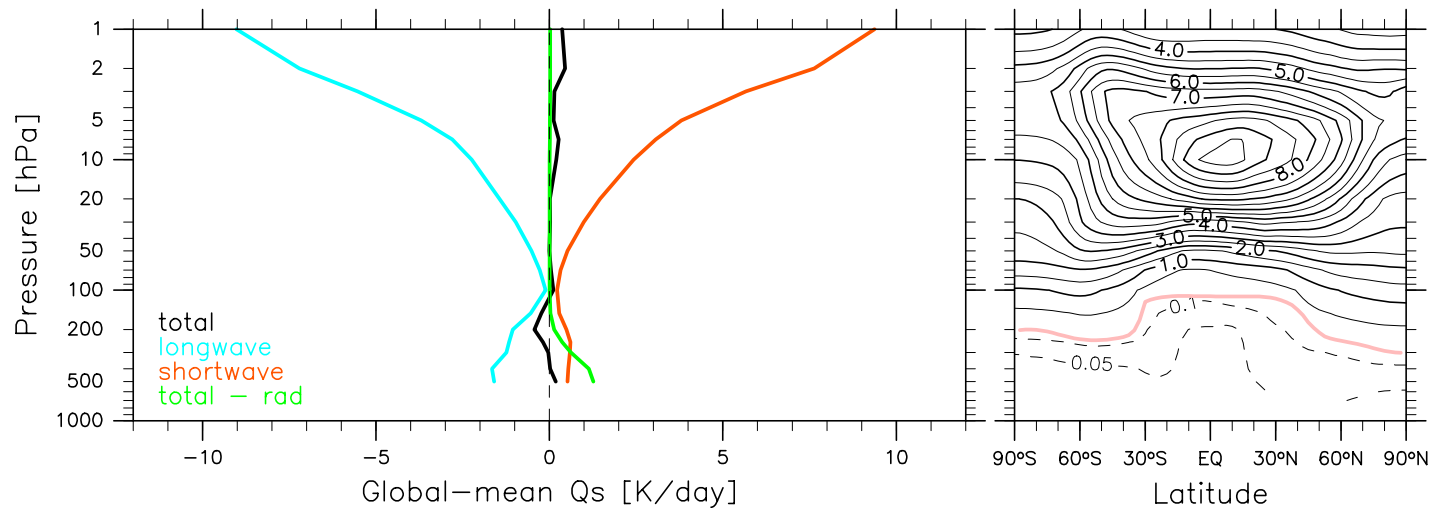
(c)  $Q_{\text{shortwave}}$  [K/d]

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



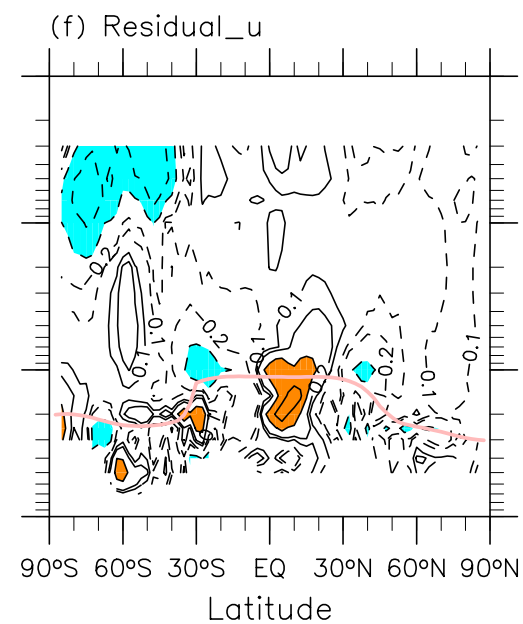
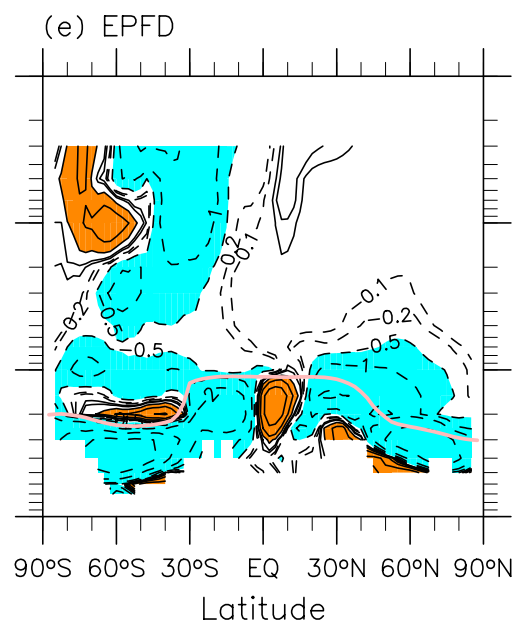
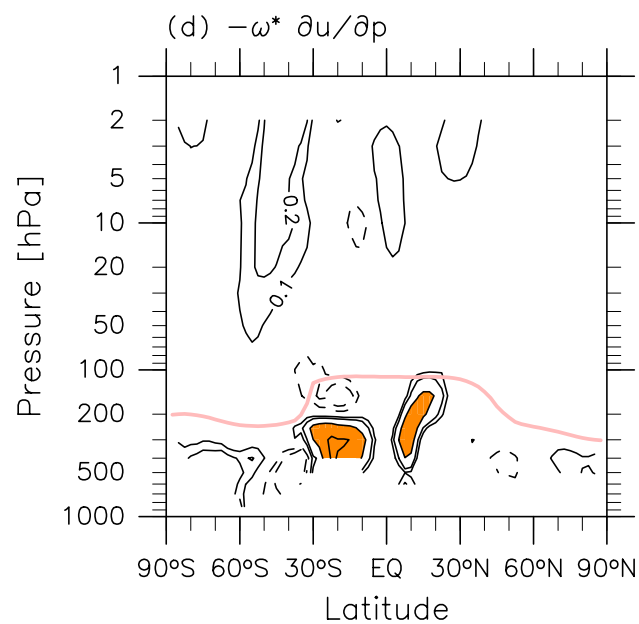
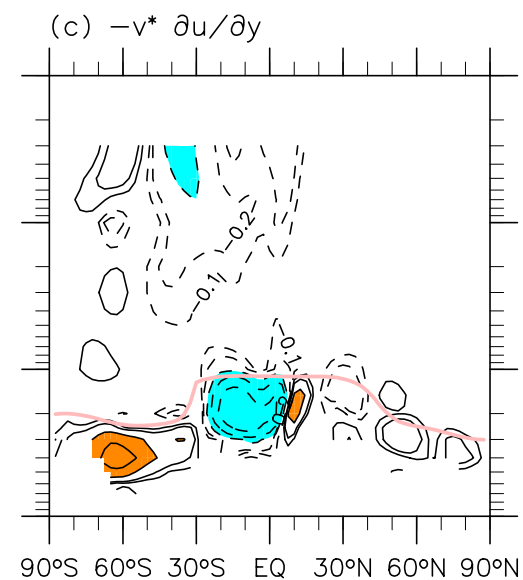
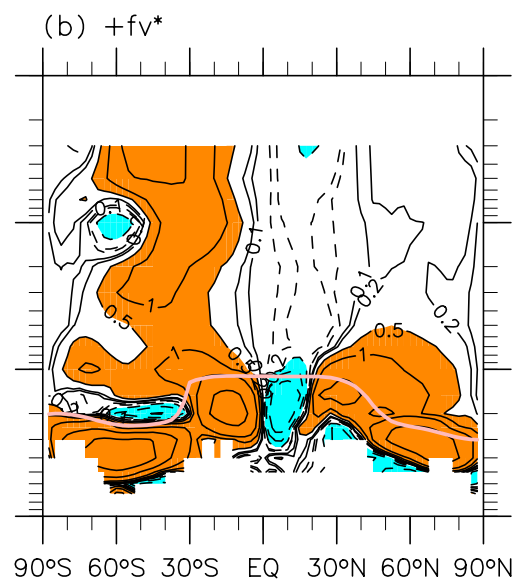
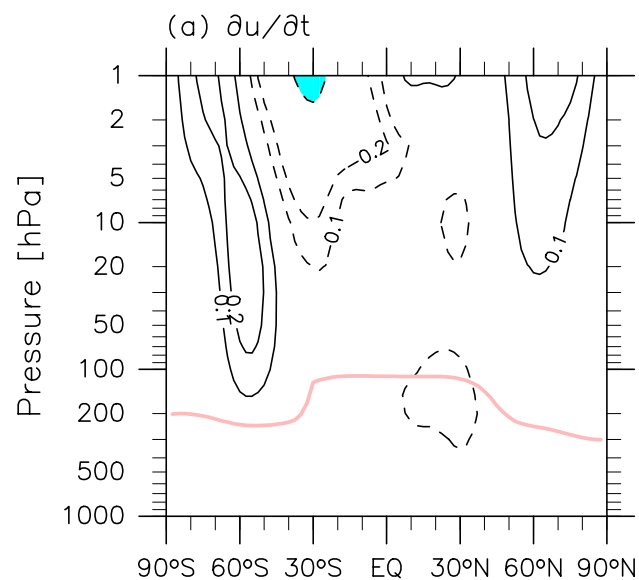
(e) Global-mean  $Q_s$  [K/d]

(f) Ozone [ppmv]



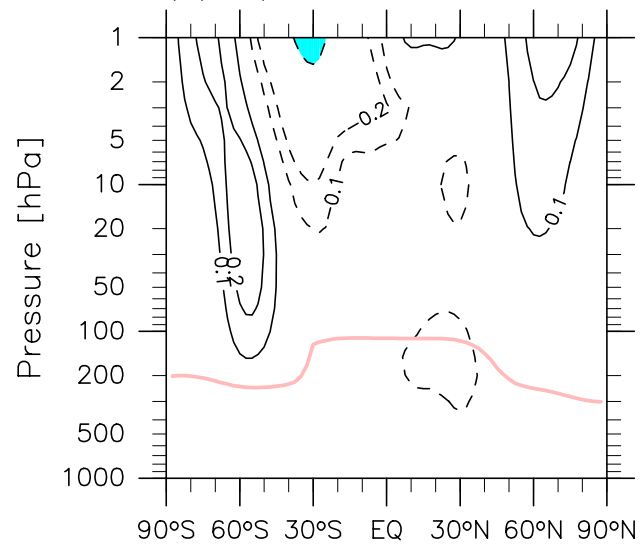
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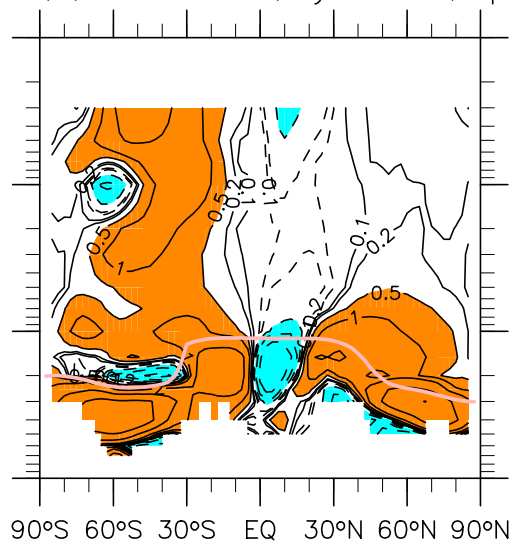
JJA (81–10)

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

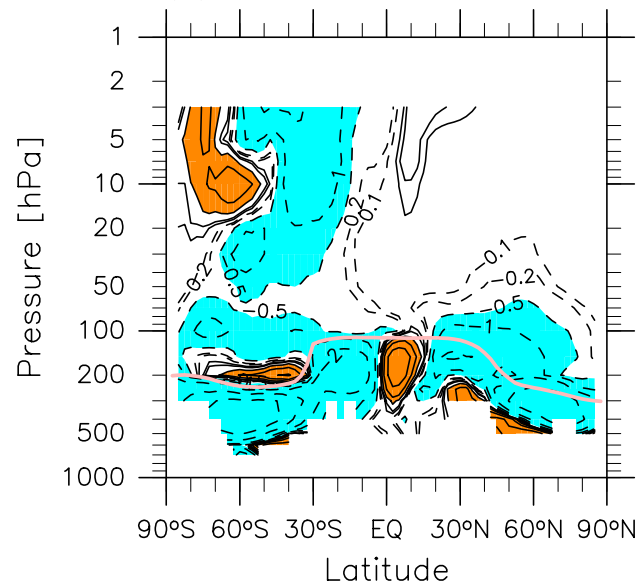


MERRA-2

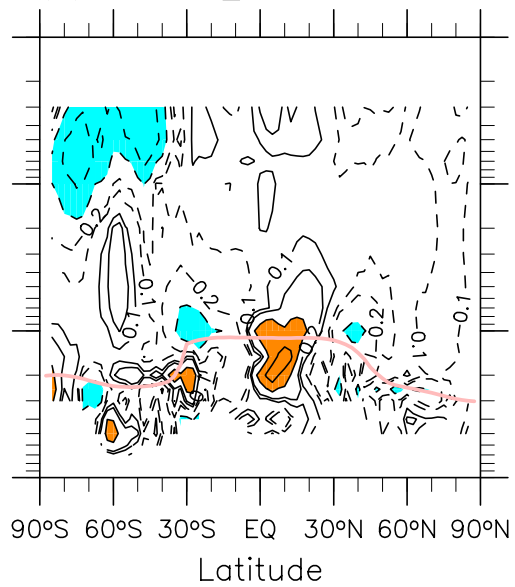
(b)  $+fv^* - v^* \partial u / \partial y - \omega^* \partial u / \partial p$



(c) EPFD

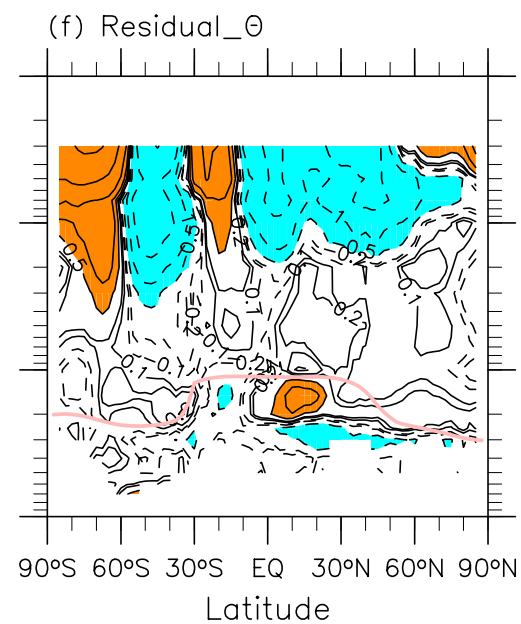
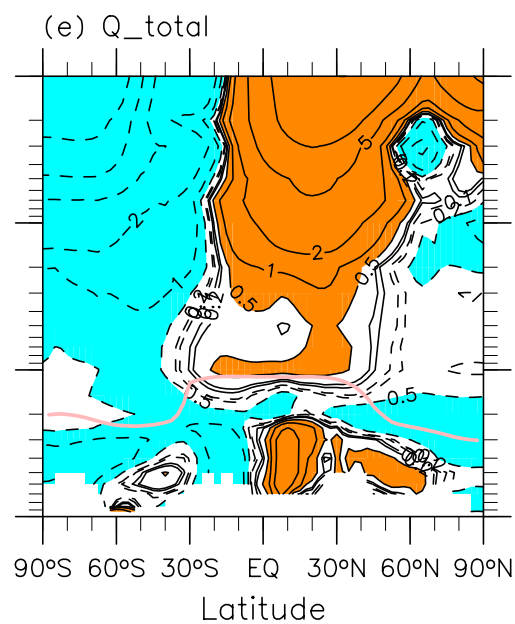
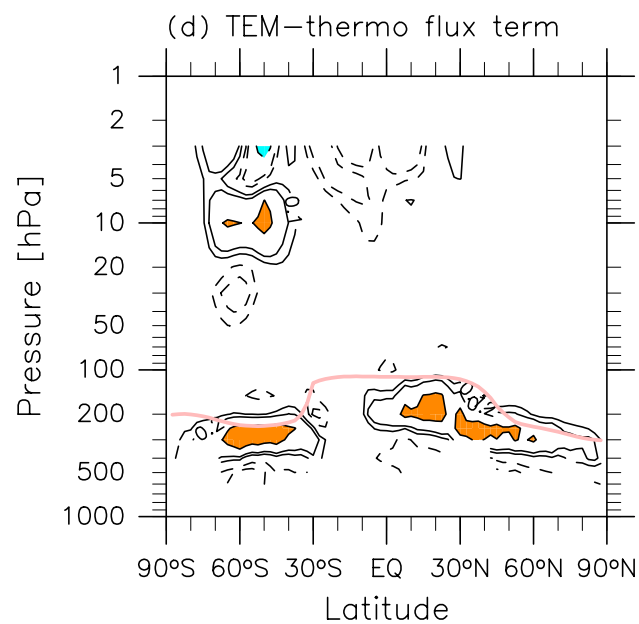
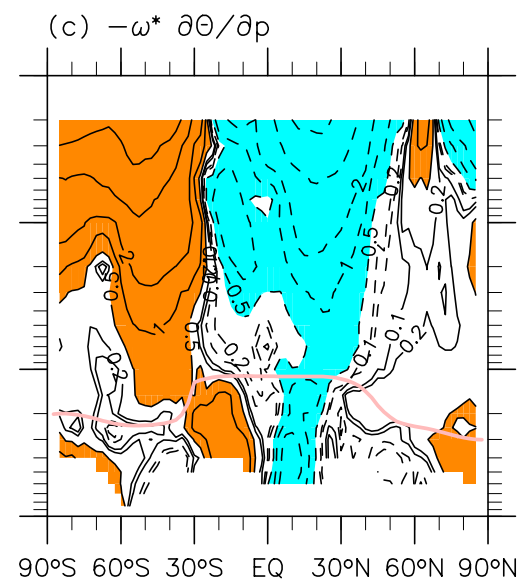
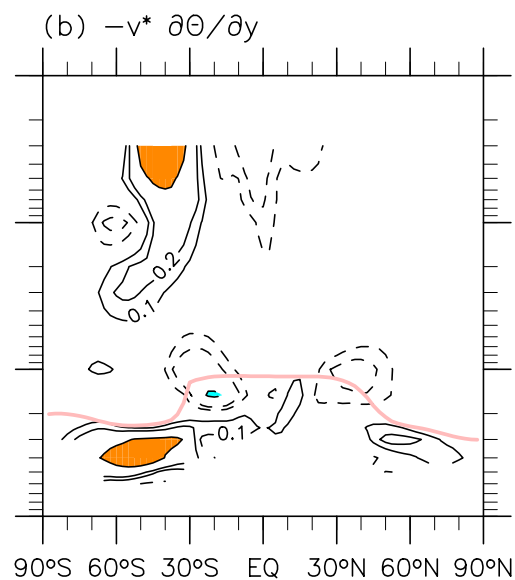
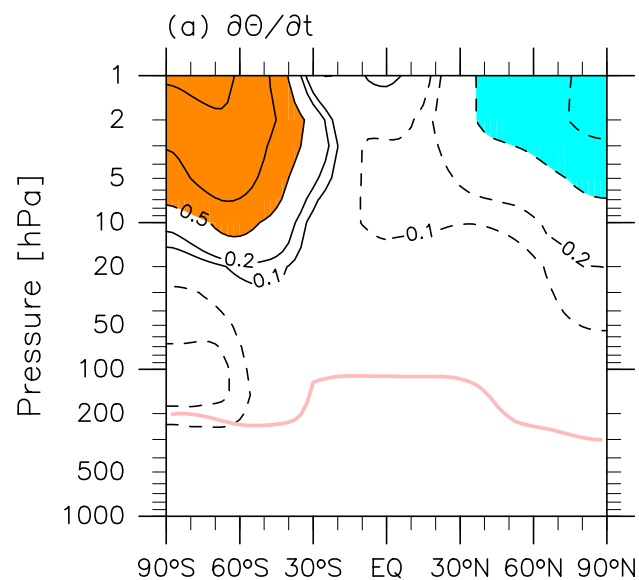


(d) Residual\_u



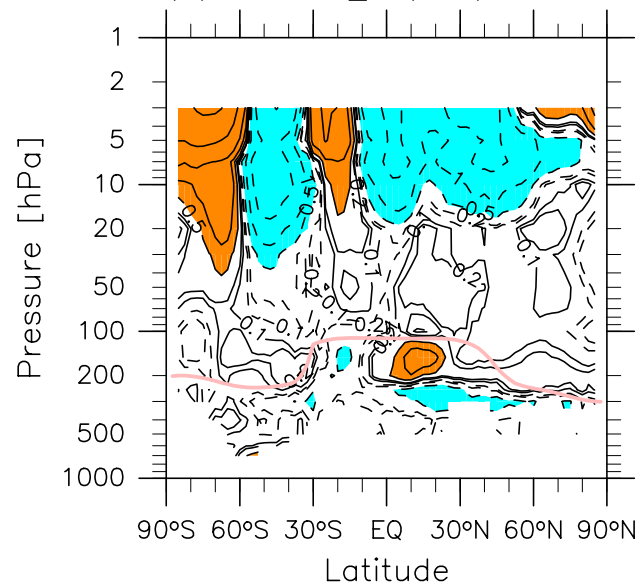
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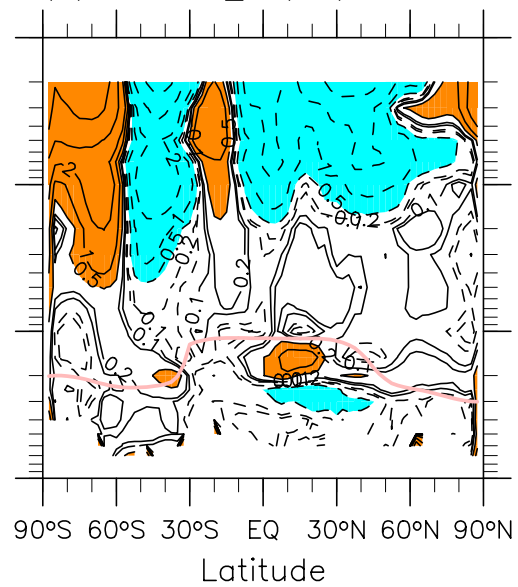


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(a) Residual\_ $\Theta$  (TEM)



(b) Residual\_ $\Theta$  (EM)



MERRA-2

(c) difference (TEM minus EM)

