

Total energy tendency associated with updating water vapor (CAM)

$$\frac{\partial}{\partial t} \int \bar{\rho}^{(d)} \left\{ \left(1 + \bar{m}^{(wv)} \right) \left[\bar{K} + \bar{\Phi}_s + c_p^{(d)} (\bar{T} - T_{00}) \right] + \bar{m}^{(wv)} L_{s,00} + \bar{m}^{(liq)} L_{f,00} \right\} dz$$

$$-\underline{\Delta \mathcal{I}_{\partial m^{(wv)}/\partial t}^{(CAM)}} = -c_p^{(d)} \bar{F}_{net}^{(wv)} T_{00} + \left\{ \bar{F}_{net}^{(wv)} L_{s,00} + \bar{F}_{net}^{(liq)} L_{f,00} + \bar{F}_{net}^{(turb,rad)} \right\}$$

