

# Midlatitude Tropopause and Low-Level Moisture

## *Corrections of typos*

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# 1. Relationship between tropopause and surface equivalent potential temperature

$$\Psi_{\text{STEM}}(\phi, \theta_e) = \Psi_{\text{eul}}(\phi, \theta_e) + \Psi_{\text{eddy}}(\phi, \theta_e), \quad (1)$$

$$\Psi_{\text{eul}}(\phi, \theta_e) = \int_0^{p_s} \frac{2\pi a \cos \phi}{g} \frac{1}{\bar{v}} \frac{1}{2} \left[ 1 + \operatorname{erf} \left( \frac{\theta_e - \bar{\theta}_e}{\sqrt{2} \bar{\theta}'_e{}^{1/2}} \right) \right] d\tilde{p}, \quad (2)$$

$$\Psi_{\text{eddy}}(\phi, \theta_e) = \int_0^{p_s} \frac{2\pi a \cos \phi}{g} \frac{-\bar{v}'\theta'_e}{\sqrt{2\pi} \bar{\theta}'_e{}^{1/2}} \exp \left( -\frac{(\theta_e - \bar{\theta}_e)^2}{2\bar{\theta}'_e{}^2} \right) d\tilde{p}, \quad (3)$$