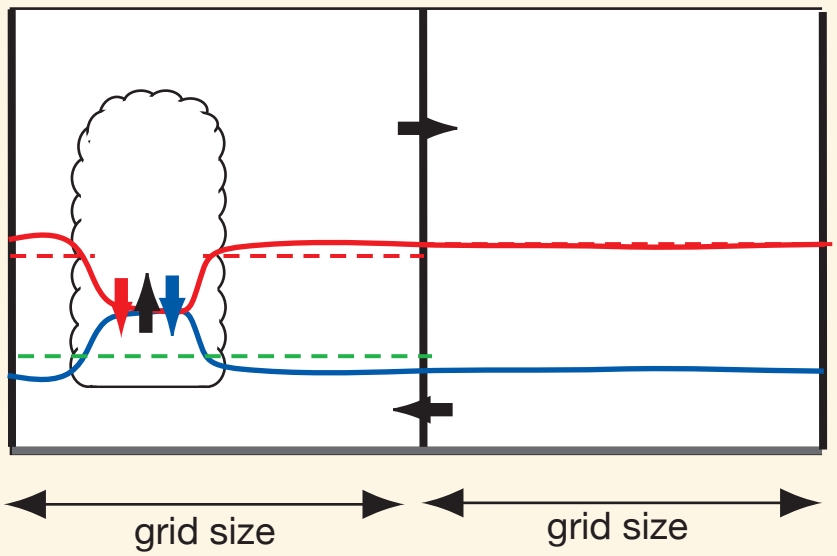
$$\left(\frac{\partial}{\partial t}\right)_{\theta} \overline{\rho^{*\theta}}^{\theta} = -\left[\overline{\nabla_{\theta} \cdot \left(\rho^{*\theta}\, \hat{\mathbf{v}}^{\theta}\right)}^{\theta} - \frac{\partial}{\partial \theta} \overline{\rho^{*\theta}\, \dot{\theta}}^{\theta}\right] \qquad (1)$$

$$\left(\frac{\partial}{\partial t}\right)_{q} \overline{\rho^{*q}}^{q} = -\left[\overline{\nabla_{q} \cdot \left(\rho^{*q}\, \hat{\mathbf{v}}^{q}\right)}^{q} - \frac{\partial}{\partial q} \overline{\rho^{*q}\, \dot{q}}^{q}\right] \qquad (2)$$

MERITS

- No artificial split of the subsidence effect
- For idealized situations such as the one shown in the figure, convergence to real source can be achieved if the fractional cloud cover is predicted.
- More direct relation to the Multi-Scale Modeling approach