$$Q_s = \rho_a c_p C_D^* (1 + \alpha T_o') \|\mathbf{U}\| (T_o - T_a) \tag{1}$$
$$Q_L = \rho_a L_v C_D^* (1 + \alpha T_o') \|\mathbf{U}\| (q_o^* - q_a) \tag{2}$$

and the total flux is

$$F = Q_s + Q_L \tag{3}$$

At large scales, $T_a^{LP} \propto T_o^{LP}$ such that the low-pass-filtered fields