

$$\int \overline{\Phi}_s \frac{\partial}{\partial t} \left[ \overline{\rho^{(d)}} \overline{m^{(H_2O)}} \right] dz - \overline{F^{(H_2O)}} \overline{\Phi}_s = - \Delta \overline{I^{(\Phi)}}_{\partial m(H_2O)/\partial t}$$