

$$\frac{\partial h^*}{\partial t^*} + \frac{\partial U^*}{\partial x} + \frac{\partial V^*}{\partial y} + bh^*T \quad (1)$$

$$\frac{1}{T} \frac{\partial U^*}{\partial t^*} + aU^* + \frac{T}{h_0g} \frac{\partial h^*}{\partial x} - fU^* \quad (2)$$

$$\frac{1}{T} \frac{\partial V^*}{\partial t^*} + aV^* + \frac{T}{h_0g} \frac{\partial h^*}{\partial y} - fV^* \quad (3)$$

$$T = \sqrt{\frac{2h_0}{g}} \quad (4)$$