

$$\frac{\partial h}{\partial t} + \frac{\partial(uh)}{\partial x} + \frac{\partial(vh)}{\partial y} = 0$$

$$\frac{\partial(uh)}{\partial t} + \frac{\partial(u^2h + 1/2gh^2)}{\partial x} + \frac{\partial(uvh)}{\partial y} = 0$$

$$\frac{\partial(vh)}{\partial t} + \frac{\partial(uvh)}{\partial x} + \frac{\partial(v^2h + 1/2gh^2)}{\partial y} = 0$$