$$\Delta x = \Delta y = \Delta$$

$$\frac{\partial u}{\partial t} + u\frac{\partial u}{\partial x} + u\frac{\partial u}{\partial y} = \nu\frac{\partial^2 u}{\partial x^2} + \nu\frac{\partial^2 u}{\partial y^2}$$

$$\frac{u_{ij}^{t+1} - u_{ij}^{t}}{\Delta t} + u_{ij}^{t}\frac{(u_{i+1j}^{t} - u_{i-1j}^{t} + u_{ij+1}^{t} - u_{ij-1}^{t})}{2\Delta}$$

$$=$$

$$\frac{\nu}{\Delta^2}(u_{i+1j}^{t} - 2u_{ij}^{t} + u_{i-1j}^{t} + u_{ij+1}^{t} - 2u_{ij}^{t} + u_{ij-1}^{t}).$$

despejamos para $u_{ij}^{t+1}$:

$$u_{ij}^{t+1} = u_{ij}^{t} + \Delta t\Big[-\frac{u_{ij}^{t}}{2\Delta}(u_{i+1j}^{t} - u_{i-1j}^{t} + u_{ij+1}^{t} - u_{ij-1}^{t})$$

$$+ \frac{\nu}{\Delta^2}(u_{i+1j}^{t} - 4u_{ij}^{t} + u_{i-1j}^{t} + u_{ij+1}^{t} + u_{ij-1}^{t})$$

Potencial de acción $\rightarrow u$ $\qquad \frac{\partial u}{\partial t} = D \frac{\partial^2 u}{\partial x^2} - u(u-a)(1-u) + w.$

variable de recuperación $\rightarrow w.$

$$\frac{u_i^{l+1} - u_i^l}{\Delta t} = D\left(\frac{u_{i+1}^l - 2u_i^l + u_{i-1}^l}{(\Delta x)^2}\right) - u_i^l(u_i^l - a)(1 - u_i^l) + w_i^l.$$

$$u_i^{l+1} = u_i^l + \frac{D\Delta t}{(\Delta x)^2}\left[u_{i+1}^l - 2u_i^l + u_{i-1}^l\right] + (-u_i^l(u_i^l - a)(1 - u_i^l) + w_i^l)\Delta t$$

$$\frac{\partial \omega}{\partial t} = \epsilon(u - b\omega).$$

$$\frac{\omega_i^{l+1} - \omega_i^{l}}{\Delta t} = \varepsilon(u_i^l - b\omega_i^l).$$

$$\omega_i^{l+1} = \Delta t \varepsilon u_i^l - \varepsilon b \Delta t \omega_i^l + \omega_i^l.$$