

backward eqn

$$\frac{\partial f(t, x; T, y)}{\partial t} = -m(t, x) \frac{\partial f(t, x; T, y)}{\partial x} - \frac{\sigma^2}{2}(t, x) \frac{\partial^2 f(t, x; T, y)}{\partial x^2}$$

forward equation

$$\frac{\partial f(t, x; T, y)}{\partial T} = -\frac{\partial}{\partial y} (m(T, y) f(t, x; T, y)) + \frac{1}{2} \frac{\partial^2}{\partial y^2} (\sigma^2(T, y) f(t, x; T, y))$$