

传递过程原理: N-S 方程

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1. 直角坐标系下的 N-S 方程为:

1-1 欧拉方程

$$\rho\left(\frac{\partial u}{\partial t} + u\frac{\partial u}{\partial x} + v\frac{\partial u}{\partial y} + w\frac{\partial u}{\partial z}\right) = f_x - \frac{\partial P}{\partial x} + \mu\left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2}\right)$$
(1-1)

$$\rho \left(\frac{\partial v}{\partial t} + u \frac{\partial v}{\partial x} + v \frac{\partial v}{\partial y} + w \frac{\partial v}{\partial z} \right) = f_y - \frac{\partial P}{\partial y} + \mu \left(\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} + \frac{\partial^2 v}{\partial z^2} \right)$$
(1-2)

$$\rho \left(\frac{\partial w}{\partial t} + u \frac{\partial w}{\partial x} + v \frac{\partial w}{\partial y} + w \frac{\partial w}{\partial z} \right) = f_z - \frac{\partial P}{\partial z} + \mu \left(\frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial y^2} + \frac{\partial^2 w}{\partial z^2} \right)$$
(1-3)

由公式1-3可得: c=2.5

1-2 拉普拉斯方程

$$\rho \left(\frac{\partial u}{\partial t} + u \frac{\partial u}{\partial x} + v \frac{\partial u}{\partial y} + w \frac{\partial u}{\partial z} \right) = f_x - \frac{\partial P}{\partial x} + \mu \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} \right)
\rho \left(\frac{\partial v}{\partial t} + u \frac{\partial v}{\partial x} + v \frac{\partial v}{\partial y} + w \frac{\partial v}{\partial z} \right) = f_y - \frac{\partial P}{\partial y} + \mu \left(\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} + \frac{\partial^2 v}{\partial z^2} \right)
\rho \left(\frac{\partial w}{\partial t} + u \frac{\partial w}{\partial x} + v \frac{\partial w}{\partial y} + w \frac{\partial w}{\partial z} \right) = f_z - \frac{\partial P}{\partial z} + \mu \left(\frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial y^2} + \frac{\partial^2 w}{\partial z^2} \right)$$
(1-4)

解方程1-4可得: ee = 8

2. 第二题

333上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以上面我们讨论了如何对图、表、公式添加标签并在文中引用它,可以

$$E = mc^2 (2-1)$$