Midpoint

$\Delta x = \Delta t \cdot v(x,t)$

$V_{mid} = V\left(x + \frac{\Delta x}{2}, \frac{t + \Delta t}{2}\right)$

$x_1 = x_0 + \Delta t \cdot V_{mid}$

$$J = \begin{pmatrix} \frac{\partial V_x}{\partial x}, & \frac{\partial V_x}{\partial y}, & \frac{\partial V_x}{\partial z} \\ \frac{\partial V_y}{\partial x}, & \frac{\partial V_y}{\partial y}, & \frac{\partial V_y}{\partial z} \\ \frac{\partial V_z}{\partial x} & \frac{\partial V_z}{\partial y} & \frac{\partial V_z}{z} \end{pmatrix}$$

Div = Diagnol

$$\text{Curl} = \begin{pmatrix} \frac{\partial V_z}{\partial y} - \frac{\partial V_y}{\partial z} \\ \frac{\partial V_x}{\partial z} - \frac{\partial V_z}{\partial z} \\ \frac{\partial V_y}{\partial x} - \frac{\partial V_x}{y} \end{pmatrix}$$

$C_{in} = 0 \quad \alpha_{in} = 0$

$C_{out} = C_{in} + (1 - \alpha_{in}) \cdot \alpha \cdot C$

$\alpha_{out} = \alpha_{in} + (1 - \alpha_{in}) \cdot \alpha$

$C = k_s \cdot O_L \cdot (\vec{r} \cdot \vec{v})^{n}$

$\vec{l} = L_{pos} - P \qquad \vec{r} = 2 \cdot (\vec{n} \cdot \vec{l})\vec{n} - \vec{l}$

$\vec{v} = E_{pos} - P$

$\text{Hyperbol} = r(\alpha - \alpha_0) \cdot (\beta - \beta_0) \cdot \delta$

$\frac{\alpha}{1} = \frac{f_c - f_0}{f_1 - f_0}$