

$$\left. \frac{\partial}{\partial x} \left(\frac{1}{\rho} \frac{\partial p}{\partial x} \right) \right|_i \approx \frac{1}{\Delta x} \left[\frac{1}{\rho_{i+\frac{1}{2}}} \frac{p_{i+1} - p_i}{\Delta x} - \frac{1}{\rho_{i-\frac{1}{2}}} \frac{p_i - p_{i-1}}{\Delta x} \right]$$