

$$\phi(S_2^{n+1} - S_2^n) - \nabla \cdot (m_2(S_2^{n+1})K \nabla \Psi_2^n) \Delta t = \left(q_2^n + q_1^n \frac{m_2(S_2^{n+1})}{m_1(S_2^{n+1})} \right) \Delta t$$

