$$\frac{\partial \rho_s}{\partial t} + \frac{\partial (\rho_s u_i)}{\partial x_i} = -\frac{\partial (\rho_s v_{si})}{\partial x_i} + w_i$$

$$u_i = \sum_{s=1}^{ns} \frac{\rho_s}{\rho} u_{si}$$

$$\frac{\partial \rho u_i}{\partial t} + \frac{\partial (\rho u_i u_j)}{\partial x_j} = -\frac{\partial p}{\partial x_i} + \frac{\partial \tau_{ij}}{\partial x_j}$$