



$$\left\{ \begin{array}{l} \cancel{\frac{\partial S_{11}}{\partial x_1}} + \cancel{\frac{\partial S_{21}}{\partial x_2}} + \frac{\partial S_{31}}{\partial x_3} + \cancel{\rho b_1} = \cancel{\frac{\partial^2(\rho u_1)}{\partial t^2}} \\ \cancel{\frac{\partial S_{12}}{\partial x_1}} + \cancel{\frac{\partial S_{22}}{\partial x_2}} + \frac{\partial S_{32}}{\partial x_3} + \cancel{\rho b_2} = \cancel{\frac{\partial^2(\rho u_2)}{\partial t^2}} \\ \cancel{\frac{\partial S_{13}}{\partial x_1}} + \cancel{\frac{\partial S_{23}}{\partial x_2}} + \frac{\partial S_{33}}{\partial x_3} + \rho b_3 = \cancel{\frac{\partial^2(\rho u_3)}{\partial t^2}} \end{array} \right.$$

$$\frac{\partial S_{33}}{\partial x_3} - \rho(x_3)g = 0$$

$$S_{33} = \int_0^{x_3} \rho(x_3)g \, dx_3$$