The Reynolds stress is modelled using:

$$-\langle \rho u_i'' u_j'' \rangle \approx \mu_t \left(\frac{\partial \{u_i\}}{\partial x_j} + \frac{\partial \{u_j\}}{\partial x_i} - \frac{2}{3}\delta_{ij} \nabla \cdot \{u\} \right) - \frac{2}{3}\rho k \delta_{ij} \tag{1}$$

$$\langle \rho u_z' T' \rangle = -C_t T_\tau \left\langle \rho u_z'' u_j'' \right\rangle \frac{\partial \{T\}}{\partial x_j} \tag{2}$$

$$B_k = -\frac{1}{Fr_0^2} \beta_T \left\langle \rho u_z' T' \right\rangle \tag{3}$$

And the turbulent heat flux according to:

$$-\left\langle \rho u_j'' H'' \right\rangle \approx \langle \rho \rangle \, \alpha_t \frac{\partial \{H\}}{\partial x_j} \tag{4}$$

The bouyancy is modelled using:

$$\beta_T = \frac{1}{\rho} \frac{\partial \rho}{\partial T} \tag{5}$$