T.k.e.

- $\bar{T}_j \equiv \frac{1}{\rho}\bar{p}\bar{u}_j - 2\nu\bar{u}_i\bar{e}_{ij} + \overline{u'_i u'_j}\,\bar{u}_i$
- $\mathcal{P} \equiv -\overline{u'_i u'_j}\,\frac{\partial \bar{u}_i}{\partial x_j}$
- $\bar{\varepsilon} \equiv 2\nu\bar{e}_{ij}\bar{e}_{ij} \geq 0$

$$\frac{\bar{D}}{Dt}\left(\frac{1}{2}\|\bar{\mathbf{u}}\|^2\right) = -\nabla\cdot\bar{\mathbf{T}} - \mathcal{P} - \bar{\varepsilon}$$

- $T^\star_j \equiv \frac{1}{\rho}\overline{p'u'_j} + \frac{1}{2}(\overline{u'_i u'_i u'_j}) - 2\nu\overline{u'_i e'_{ij}}$
- $\varepsilon \equiv 2\,\nu\,\overline{e'_{ij}e'_{ij}} \geq 0$

$$k \equiv \frac{1}{2}\overline{\left(u'^2 + v'^2 + w'^2\right)}$$

$$\frac{\bar{D}k}{Dt} = -\nabla\cdot\mathbf{T}^\star + \mathcal{P} - \varepsilon$$