

$$\psi(x, y) = x\sqrt{av_f} f(\eta)$$

$$\eta = \sqrt{\frac{a}{v_f}} y, \quad \bar{u} = axf'(\eta), \quad \bar{v} = \sqrt{av_f} f(\eta),$$

$$\bar{T} = \bar{T}_\infty + (\bar{T}_w - \bar{T}_\infty)\theta(\eta), \quad \bar{C} = \bar{C}_\infty + (\bar{C}_w - \bar{C}_\infty)\chi(\eta), \quad \bar{N} = \bar{N}_\infty + (\bar{N}_w - \bar{N}_\infty)\varphi(\eta).$$