$$v_1 = -\frac{\delta\theta}{\theta\delta t}x - \frac{1}{\theta}\sum_{j=1}^{J} b_2^{(j)}\frac{\delta\eta_j}{\delta t},$$

$$v_2 = -\frac{\delta\theta}{\theta\delta t}y + \frac{1}{\theta}\sum_{j=1}^{J} b_1^{(j)}\frac{\delta\eta_j}{\delta t},$$