

$$\begin{aligned} \dot{a}_{1,1} = & \frac{g^2 c_{11g} + c_{11}}{g^2 n_{1g} + n_1} a_{1,1} + \frac{g^2 c_{12g} + c_{12}}{g^2 n_{1g} + n_1} a_{1,2} + \frac{1}{\text{Re}} \left[-\left(\frac{2\pi}{L}\right)^2 + \frac{g^2 d_{1g} + d_1}{g^2 n_{1g} + n_1} g^2 \right] a_{1,1} \\ & + \frac{g^2 e_{1g} + e_1}{g^2 n_{1g} + n_1} \frac{\dot{g}}{g} a_{1,1}, \end{aligned}$$