$$k_{l0}\,\zeta_6(t) + k_{l0}\left(\zeta_6(t) - \zeta_7(t)\right) + 2\,m_0\left(\cos(\theta(t))\,R(t) - \cos(\alpha(t))\cos(\theta(t)+\psi(t))\left(\frac{L_0}{10} + \eta_6(t)\right)\right)$$

$$\zeta_6{}'(t)\left(\cos(\theta(t))\,R'(t) + \cos(\theta(t)+\psi(t))\sin(\alpha(t))\left(\frac{L_0}{10} + \eta_6(t)\right)\alpha'(t) - R(t)\sin(\theta(t))\,\theta'(t) + \right.$$

$$\left. \cos(\alpha(t))\sin(\theta(t)+\psi(t))\left(\frac{L_0}{10} + \eta_6(t)\right)\left(\theta'(t) + \psi'(t)\right) - \cos(\alpha(t))\cos(\theta(t)+\psi(t))\,\eta_6{}'(t)\right) +$$

$$\left(m_0\left(\cos(\theta(t))\,R(t) - \cos(\alpha(t))\cos(\theta(t)+\psi(t))\left(\frac{L_0}{10} + \eta_6(t)\right)\right)^2 + i_{xm6}\right)\zeta_6{}''(t) =$$

$$c_{l0}\left(\zeta_7{}'(t) - \zeta_6{}'(t)\right) - c_{l0}\,\zeta_6{}'(t)$$