$$-k_{t0}\left(\varphi_3(t)-\varphi_4(t)\right)+k_{t0}\left(\varphi_4(t)-\varphi_5(t)\right)+i_{ym4}\,\varphi_4''(t)=\ c_{t0}\left(\dot{\varphi}_3-\dot{\varphi}_4\right)-c_{t0}\left(\dot{\varphi}_4-\dot{\varphi}_5\right)$$