

$$\begin{aligned}
& - \left(\left(2 \left(-2 \dot{\tilde{\alpha}}_C^2 H M_V^2 - 2 \tilde{\alpha}_C^2 (1 + \tilde{\alpha}_M)^2 H^3 M_V^2 + \right. \right. \right. \\
& \quad \left. \left. \left(-\tilde{\alpha}_M + \tilde{\alpha}_T \right) \tilde{\alpha}_V H^3 M_V^2 + \dot{\tilde{\alpha}}_C \left(\dot{\varphi}^2 + 2 \left(\dot{H} - (\tilde{\alpha}_M + 2 \tilde{\alpha}_C (1 + \tilde{\alpha}_M) - \tilde{\alpha}_T) H^2 \right) M_V^2 \right) + \right. \right. \\
& \quad \left. \left. \tilde{\alpha}_C (1 + \tilde{\alpha}_M) H \left(\dot{\varphi}^2 + 2 \left(\dot{H} + (-\tilde{\alpha}_M + \tilde{\alpha}_T) H^2 \right) M_V^2 \right) \right) M_P^2 V'[\varphi] \right) / \\
& \left(\left(\ddot{\varphi} + 3 \dot{\varphi} H \right) M_V^2 \left(H \left(\tilde{\alpha}_A^2 (-\tilde{\alpha}_M + \tilde{\alpha}_T) H^2 M_V^2 + \right. \right. \right. \\
& \quad \tilde{\alpha}_A \left((1 + \tilde{\alpha}_C) \dot{\varphi}^2 + 2 (1 + \tilde{\alpha}_C) \dot{H} M_V^2 - 2 (1 + 2 \tilde{\alpha}_C) H \left(\dot{\tilde{\alpha}}_C + (\tilde{\alpha}_C + \tilde{\alpha}_M + \tilde{\alpha}_C \tilde{\alpha}_M - \tilde{\alpha}_T) H \right) M_V^2 \right) + \\
& \quad \left. 2 \tilde{\alpha}_C (1 + \tilde{\alpha}_C) \left(\dot{\varphi}^2 + 2 \dot{H} M_V^2 + H \left(-2 \dot{\tilde{\alpha}}_C + (-2 \tilde{\alpha}_M - 2 \tilde{\alpha}_C (1 + \tilde{\alpha}_M) + 2 \tilde{\alpha}_T + \tilde{\alpha}_V) H \right) M_V^2 \right) \right) + \\
& \quad \tilde{\alpha}_K \left(2 \dot{\tilde{\alpha}}_C^2 H M_V^2 + 2 \tilde{\alpha}_C^2 (1 + \tilde{\alpha}_M)^2 H^3 M_V^2 + (\tilde{\alpha}_M - \tilde{\alpha}_T) \tilde{\alpha}_V H^3 M_V^2 - \right. \\
& \quad \dot{\tilde{\alpha}}_C \left(\dot{\varphi}^2 + 2 \left(\dot{H} - (\tilde{\alpha}_M + 2 \tilde{\alpha}_C (1 + \tilde{\alpha}_M) - \tilde{\alpha}_T) H^2 \right) M_V^2 \right) - \\
& \quad \left. \tilde{\alpha}_C (1 + \tilde{\alpha}_M) H \left(\dot{\varphi}^2 + 2 \left(\dot{H} + (-\tilde{\alpha}_M + \tilde{\alpha}_T) H^2 \right) M_V^2 \right) \right) + \gamma \left(-4 \dot{\tilde{\alpha}}_C^2 H M_V^2 + \right. \\
& \quad 2 \dot{\tilde{\alpha}}_C \left((1 + \tilde{\alpha}_C) \dot{\varphi}^2 + 2 (1 + \tilde{\alpha}_C) \dot{H} M_V^2 + (\tilde{\alpha}_A (1 + \tilde{\alpha}_M) - 2 (\tilde{\alpha}_C + \tilde{\alpha}_M + \tilde{\alpha}_C \tilde{\alpha}_M - \tilde{\alpha}_T)) H^2 M_V^2 \right) + \\
& \quad H \left(-\tilde{\alpha}_A \left((1 + \tilde{\alpha}_T) \dot{\varphi}^2 + 2 (1 + \tilde{\alpha}_T) \dot{H} M_V^2 - 2 (1 + \tilde{\alpha}_M) (\tilde{\alpha}_C + \tilde{\alpha}_M + \tilde{\alpha}_C \tilde{\alpha}_M - \tilde{\alpha}_T) H^2 M_V^2 \right) + \right. \\
& \quad \left. \left. 2 (\tilde{\alpha}_C + \tilde{\alpha}_M + \tilde{\alpha}_C \tilde{\alpha}_M - \tilde{\alpha}_T) \left(-\tilde{\alpha}_V H^2 M_V^2 + \tilde{\alpha}_C \left(\dot{\varphi}^2 + 2 \dot{H} M_V^2 \right) \right) \right) \right) \right)
\end{aligned}$$