

$$S_{\sigma}^{(2)} = \frac{6(n-1)\Lambda^2}{M^4} \int d\tau d^3k a^2 H^2 \left[ |\delta\sigma'_k|^2 - \frac{\epsilon k^2}{3(n-1)} |\delta\sigma_k|^2 \right], \quad \epsilon \equiv -\frac{\dot{H}}{H^2}.$$