

same dimensions as the bare fields as defined here. One could assign them their canonical ($d=4$) dimensions by replacing Z_A and Z_a by $\mu^{-\epsilon}Z_A$ and $\mu^{-\epsilon}Z_a$ in Eq. (3.8). This would not alter the final results.

On p. 956, in Eq. (3.24), line 4, replace

$$\frac{1}{(-\frac{1}{6}R)^{j-2}} \quad \text{with} \quad \frac{\Gamma(j - \frac{1}{2}d)}{(-\frac{1}{6}R)^{j-2}} .$$

On p. 956, in Eq. (3.25a), replace C with Ce_g^2 .

On p. 956, in Eqs. (3.25b)–(3.25d), replace $\alpha_i^{(1)}$ with $-\alpha_i^{(1)}$ for $i=1,2,3$ and delete e_g^2 .

On p. 957, the paragraph following Eq. (3.25e) should read as follows: At this point we wish to draw attention to the fact that, after the pole term has been canceled, the first three terms in (3.24) take the form

$$S[A] + S_{\text{grav}} - \frac{1}{16\pi^2} \int dv_x \left[\ln \left(\frac{-\frac{1}{6}R}{4\pi\mu^2} \right) + \gamma \right] \left[\frac{11}{22} e_g^2 C F_a^{\mu\nu} F_{\mu\nu,a} + \left(-\frac{13}{360} R_{\mu\nu\rho\sigma} R^{\mu\nu\rho\sigma} + \frac{11}{45} R_{\mu\nu} R^{\mu\nu} - \frac{5}{72} R^2 \right) N \right] , \quad (3.26)$$

where γ is Euler's number, and $S[A]$ and S_{grav} contain only finite coupling constants and fields. This has important consequences.

On p. 957, in the last paragraph of Sec. III, line 7, after the word "less" insert the following sentence: In Eqs. (3.24) and (3.26) a term involving $\square R$ has been neglected because after integration by parts it contributes to $\Gamma[A]$ terms which also remain of order unity.

On p. 958, Eq. (4.20) should read

$$iy^a e^{ip \cdot y} = \frac{\partial}{\partial p_a} e^{ip \cdot y} .$$

On p. 963, in the second column at the end of paragraph 1, add the following sentence: The scaling is then $\mathcal{F} \rightarrow s^a \mathcal{F}$ with $a = a(\mathcal{F})$.

On p. 965, in Sec. VI, paragraph 1, line 7, change "renormalization" to "redefinition."

On p. 965, in Sec. VI, paragraph 1, line 12 should read as follows: by defining in (3.26) or (5.26) a new field variable.

On p. 965, in Eq. (6.1) replace C with Ce_g^2 .

On p. 965, at the end of the paragraph containing Eq. (6.2), add the following: One would have arrived at the same result by removing the μ dependence immediately through a nonminimal subtraction in (3.24) with $Z_A = 1 + \epsilon^{-1} (16\pi^2)^{-1} \frac{22}{3} Ce_g^2 - (16\pi^2)^{-1} \frac{11}{3} Ce_g^2 \ln(-\frac{1}{6}R_0/4\pi\mu^2)$, followed by a redefinition of the field and coupling constant to obtain the canonical form of the action.

On p. 968, 4 lines after Eq. (8.5), " ϕ_b is an unstable" should read " $\phi_b = 0$ is an unstable."

On p. 969, insert the following at the beginning of Appendix A.

In Appendices A and B we show that the local momentum expansion of the gauge and ghost propagators, either around their second coordinate or around a third point, admits a "natural" development in inverse powers of $k^2 + R/6$, where R is evaluated at the origin of normal coordinates. By "natural" we mean that, at least for the truncated series, $k^2 = -R/6$ is the only singularity: No other terms [such as k^2 or $(k^2 + \omega R/6)$, where ω is the gauge fixing] appear in the denominators of the different terms of the expansion.

This property is essential to the arguments of Sec. V, which allowed us to find the leading-logarithm approximation to the effective action to all orders in \hbar . More precisely, the argument to go from Eq. (5.6) to Eq. (5.7) would fail if the development of the propagators were not "natural" in our sense.

In the particular case of the Feynman gauge ($\omega=1$) Jack and Parker¹⁷ proved a stronger statement: Besides ($k^2 = -R/6$) being the only singularity, the numerators are scalar curvature independent. However, this stronger restriction is not necessary to derive the results of Sec. V, which are valid in a general gauge.

On p. 970, in Eq. (A9), 3rd line, 2nd term, $R^\mu{}_{\rho\nu'\sigma}$ should read $R^\lambda{}_{\rho\nu'\sigma}$.

Erratum: Singularity-free cosmology: A simple model [Phys. Rev. D 33, 2196 (1986)]

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In the sign convention used, Eq. (3.8) should read

$$R = \frac{6}{a^3} (a + \ddot{a}) .$$

As a result of this, Eq. (3.9) is unnecessary. However, Eq. (3.10) remains unchanged as it holds for any $T_{\mu\nu}$ and one need not assume that $T_{\mu\nu}$ is traceless.