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Erratum: Einstein-Cartan gravity, matter, and scale-invariant generalization

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- Contrary to the claim made after eq. (2.14), the fermionic action (2.6) is not invariant under the transformation (2.10) supplemented with $\Psi \mapsto \Omega^{3/2}\Psi$. Instead, it transforms as follows:

$$S_f \mapsto S_f + \frac{1}{8}\int \frac{\epsilon_{IJKL}e^I e^J e^K \mathrm{d}\Omega^2}{\Omega^2}(\alpha V^L + \beta A^L)\,,$$

  where V^L and A^L are defined in eq. (2.17).

- Eq. (2.18) should read

$$-2C^{[I}{}_K B^{J]K} + \left(\frac{\mathrm{d}\eta}{\Omega^2} + \mathrm{d}\gamma\right) e^I e^J = \frac{1}{M_P^2}\left(\frac{1}{2}e^I e^J e^P A_P + \frac{1}{6}\epsilon_{KLMN}e^K e^L e^M \delta^{N[I}\left(\alpha V^{J]} + \beta A^{J]}\right)\right).$$

- Eq. (2.21) should read

$$\begin{aligned} S^{\text{eff}} = &\int \mathrm{d}^4x\sqrt{-g}\left\{\frac{M_P^2}{2}\mathring{R} + \frac{i}{2}\overline{\Psi}\gamma^\mu\mathring{D}_\mu\Psi - \frac{i}{2}\overline{\mathring{D}_\mu\Psi}\gamma^\mu\Psi\right\} \\ &- \int \mathrm{d}^4x\sqrt{-g}\left\{\frac{1}{2\Omega^2}(\partial_\mu h)^2 + \frac{U}{\Omega^4}\right\} \\ &- \int \mathrm{d}^4x\sqrt{-g}\frac{3M_P^2}{4(\gamma^2+1)}\left(\frac{\partial_\mu\eta}{\Omega^2} + \partial_\mu\gamma\right)^2 \\ &+ \int \mathrm{d}^4x\sqrt{-g}\frac{3\alpha}{4}\left(\frac{\partial_\mu\Omega^2}{\Omega^2} + \frac{\gamma}{\gamma^2+1}\left(\frac{\partial_\mu\eta}{\Omega^2} + \partial_\mu\gamma\right)\right)V^\mu \\ &+ \int \mathrm{d}^4x\sqrt{-g}\frac{3}{4}\left(\beta\frac{\partial_\mu\Omega^2}{\Omega^2} + \frac{1+\gamma\beta}{\gamma^2+1}\left(\frac{\partial_\mu\eta}{\Omega^2} + \partial_\mu\gamma\right)\right)A^\mu \\ &- \int \mathrm{d}^4x\sqrt{-g}\frac{3}{16M_P^2(\gamma^2+1)}\left(\left(1+2\gamma\beta-\beta^2\right)A_\mu^2 + 2\alpha\left(\gamma-\beta\right)A_\mu V^\mu - \alpha^2 V_\mu^2\right). \end{aligned}$$

  This change does not affect any discussions in the paper.

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