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Erratum: All-order consistency of 5D supergravity vacua [Phys. Rev. D 76, 046006 (2007)]

Patrick Meessen*

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In Sec. II it is wrongly stated that the condition $\mathcal{D}\mathsf{A} = 0$ can be used to gauge-fix the local R-symmetry[1]; the connection $\mathcal{D}$, however, contains the R-symmetry gauge-field V, making the original equation gauge covariant and is therefore not a gauge-fixing but rather a restriction on the auxiliar hyperscalars that, furthermore, need not be compatible with the dilatational symmetry gauge-fixing condition $\mathsf{A}^2 = -2$.

The flaw in the original argumentation can be overcome by imposing the standard R-symmetry gauge-fixing $\nabla\mathsf{A} = 0$, whence the auxiliary hyperscalars are constants, which is compatible with the dilatational symmetry gauge-fixing condition $\mathsf{A}^2 = -2$. These gauge-fixings imply that the supersymmetry condition for the auxiliary fermions in the hypermultiplet, Eq. (16) in the article, becomes

$$\eta = \tfrac{2}{3}\mathsf{T}\epsilon - \tfrac{1}{3}\mathsf{V}\epsilon. \tag{1}$$

Following the reasoning in the article, it then follows that Eq. (17)'s condition for the R-symmetry gauge connection becomes $\mathsf{V} = 0$, instead of $R(\mathsf{V}) = 0$; i.e. for maximally supersymmetric solutions the R-symmetry gauge connection vanishes identically. With these changes, the rest of the original argumentation goes through and does not change the conclusions of the article.

*Current address: Departamento de Física, Universidad de Oviedo Avda. Calvo Sotelo s/n, E-33007 Oviedo, Spain

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