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Zwei-Dreibein Gravity

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Erratum: Zwei-Dreibein Gravity: A Two-Frame-Field Model of 3D Massive Gravity [Phys. Rev. Lett. 111, 111102 (2013)]

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It was recently shown [1] that the “zwei-dreibein gravity” (ZDG) model of massive gravity presented in our Letter has, for generic parameters, an additional local degree of freedom in some backgrounds. The derivation, briefly presented in our Letter, of the secondary Hamiltonian constraints that exclude this possibility is not valid for generic parameters given the stated assumptions (invertibility of both dreibeine). To correct for this it is necessary to restrict the parameters such that $\beta_1\beta_2 = 0$; in the case that $\beta_1 = 0$, the required secondary constraints can be derived assuming only invertibility of e_2 (the second dreibein). An explicit restricted ZDG model of this type that satisfies all of the (bulk and boundary) unitarity conditions found in our Letter is

$$\begin{aligned}\beta_1 &= 0, & \beta_2 &= 1; & M_1 &= M_2; \\ \alpha_1 &= \frac{1}{2} + \zeta, & \alpha_2 &= 1 + \zeta & (\zeta > 0).\end{aligned}\tag{1}$$

In this case the quadratic equation for γ [Eq. (8) of our Letter] has the solution $\gamma = 1$ and it yields an AdS vacuum with radius of curvature proportional to $\sqrt{\zeta}$.

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M. Bañados, C. Deffayet, and M. Pino, *Phys. Rev. D* **88**, 124016 (2013).