Erratum: Generalised Scherk-Schwarz reductions from gauged supergravity

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I correct an important typo in one of the uplift conditions of [1], namely equation (3.16). This typo propagated from an expression that appears for the first time in equation (2.22), which should read

$$\left[T_{(CD)}^A \delta_F^B - Y^{AB}{}_{HF} T_{(CD)}^H - \frac{1}{2} Y^{HB}{}_{CD} T_{HF}^A + \right. \\ \left. + \frac{1}{2} \left(Y^{AI}{}_{CD} \delta_F^H - Y^{AH}{}_{JF} Y^{JI}{}_{CD} \right) W_{HI}^B \right] E_B^m = 0, \quad (1)$$

the indices I and H that appear in the parenthesis in the second line have been exchanged compared to [1]. A second typo is fixed in this equation, namely the sign of the second term. This sign did not propagate to the next steps in the calculation and did not affect the final result (3.16).

To prove (3.16) of [1], one uses the equation above and goes through the intermediate step (3.23), which contains the same combination of Y tensors as above, and hence the same typo. The position of the indices H and I in the right hand side of (3.23) of [1] is therefore corrected to

$$C[X]_{FCD}{}^{AB} \Theta_B^m = -\frac{1}{2} \left(Y^{AI}{}_{CD} \delta_F^H - Y^{AH}{}_{JF} Y^{JI}{}_{CD} \right) L \circ W_{HI}^B \Theta_B^m. \quad (2)$$

The uplift condition (3.16) of [1] is similarly corrected to:

$$C[X]_{FCD}{}^{AB} \Theta_B^m + \frac{1}{4} \left(Y^{AI}{}_{CD} \delta_F^H - Y^{AH}{}_{JF} Y^{JI}{}_{CD} \right) \left(X_{HI}^B + 2\Theta_{(H}{}^m{}_{\underline{m}I)}{}^B \right) \Theta_B^m = 0, \quad (3)$$

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References

- [1] G. Inverso, *Generalised Scherk-Schwarz reductions from gauged supergravity*, *JHEP* **12** (2017) 124 [[arXiv:1708.02589](#)] [[INSPIRE](#)].
- [2] M. Bugden, O. Hulik, F. Valach and D. Waldram, *G-Algebroids: A Unified Framework for Exceptional and Generalised Geometry, and Poisson-Lie Duality*, *Fortsch. Phys.* **69** (2021) 2100028 [[arXiv:2103.01139](#)] [[INSPIRE](#)].