Published for SISSA by Springer

Received: *February 26, 2026*
Accepted: *March 5, 2026*
Published: *April 24, 2026*

Erratum: De Sitter quantum gravity and the emergence of local algebras

Molly Kaplan,[a] **Donald Marolf**,[a] **Xuyang Yu**[a] **and Ying Zhao**[b,c]

[a] *Department of Physics, University of California, Santa Barbara, CA 93106, U.S.A.*
[b] *Kavli Institute for Theoretical Physics, Santa Barbara, CA 93106, U.S.A.*
[c] *Massachusetts Institute of Technology, Cambridge, MA 02139, U.S.A.*

E-mail: mekaplan@ucsb.edu, marolf@ucsb.edu, xuyangyu@ucsb.edu, zhaoying@mit.edu

Erratum to: JHEP04(2025)171

ArXiv ePrint: 2410.00111

This note corrects a few formulas in the published version of our article *JHEP 04 (2025) 171*, doi:10.1007/JHEP04(2025)171. The results and conclusions of the paper are unchanged.

1. **Section 2, eq. (2.12).** Eq. (2.12) should read

$$F_y(x) = N \exp\left[-\frac{(t-t_y)^2}{2\sigma^2}\right] \exp\left[\frac{\ell^2}{\sigma^2}(\cos\theta - 1)\cosh^2\left(\frac{t}{\ell}\right)\right] \tag{1}$$

$$\approx N \exp\left[-\frac{1}{2\sigma^2}\left((t-t_y)^2 + \ell^2\theta^2\cosh^2\left(\frac{t}{\ell}\right)\right)\right], \tag{2}$$

   where the final approximation holds for $\theta \ll 1$.

2. **Section 2, effective Euclidean line element.** The effective flat Euclidean-signature line element defined immediately below eq. (2.12) should be

$$ds_E^2 := dt^2 + \ell^2\cosh^2\left(\frac{t}{\ell}\right)\left(d\theta^2 + \theta^2\, d\Omega_{d-1}^2\right). \tag{3}$$

   With this correction, eq. (2.13) remains as written.

https://doi.org/10.1007/JHEP04(2026)203

JHEP04(2026)203

3. **Section 4, discussion after eq. (4.20).** The global time interval quoted there should include a factor of ℓ:

$$\Delta t \sim \ell \, \ln G^{-1}, \tag{4}$$

(or, more precisely in $(d+1)$ dimensions, $\Delta t \sim \ell \ln(\ell^{d-1}/G)$).

4. **Section 5, eqs. (5.8) and (5.9).** In eqs. (5.8) and (5.9), the second term on the left-hand side should carry a factor of ℓ for dimensional consistency. Thus eq. (5.8) should read

$$t_0 + \ell \ln\left(\frac{j_\star \sigma}{\ell}\right) > t > \frac{t_0}{d+1} - \frac{\ell}{d+1} \ln\left(\frac{\ell^{d-1}}{G j_\star}\right), \tag{5}$$

and eq. (5.9) should read

$$t_0 + \ell \ln\left(\epsilon_1 \epsilon_2 \frac{\ell^{d-1}}{G}\right) > t > \frac{t_0}{d+1} + \frac{\ell}{d+1} \ln \epsilon_2. \tag{6}$$

Data Availability Statement. This article has no associated data or the data will not be deposited.

Code Availability Statement. This article has no associated code or the code will not be deposited.

JHEP04(2026)203