Erratum: Inverse anisotropic catalysis in holographic QCD

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ABSTRACT: We point out minor errors appearing in the published version of our paper [1].

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After the publication of the paper [1], minor errors were found. Numerical factors in equation (3.21) describing the IR asymptotics of the metric were incorrect. The corrected version of the equation reads

$$ds_s^2 = e^{4\phi/3} ds_E^2 \sim \frac{1}{r^2} (\log r)^{-1/4} [-dt^2 + dx_1^2 + dx_2^2 + dr^2] + e^{\sqrt{6} \log r} (\log r)^{-1/4} dx_3^2. \quad (1)$$

The mistake only appears in this equation. In particular, all of our conclusions on the IR behavior are unaffected.

We also found out some errors in the numerical coefficients of equations (5.10)–(5.13), in the entanglement entropy section. The correct versions of these formulas should read:

$$\frac{S_{E,\parallel}(r_F)}{4\pi A_V M^3 N_c^2} = e^{3A(r_F)+W(r_F)} L(r_F) + 2 \int_0^{r_F} \frac{dr}{e^{W(r)}} \sqrt{e^{6A(r)+2W(r)} - e^{6A(r_F)+2W(r_F)}} - 2 \int_0^\infty dr e^{3A(r)}, \quad (2)$$

$$L(r_F) = 2 \int_0^{r_F} \frac{dr}{e^{W(r)}} \frac{1}{\sqrt{e^{6A(r)+2W(r)-6A(r_F)-2W(r_F)} - 1}}, \quad (3)$$

Figure 1. Entanglement entropy $S_{E,||}$ and $S_{E,⊥}$ for the respective regions described in section 5.4 of [1], for $x = 1$ and different values of a . Note that each curve has multiple branches.

and

$$\frac{S_{E,⊥}(r_F)}{4\pi A_V M^3 N_c^2} = e^{3A(r_F)+W(r_F)} L(r_F) + 2 \int_0^{r_F} dr \sqrt{e^{6A(r)+2W(r)} - e^{6A(r_F)+2W(r_F)}} - 2 \int_0^\infty dr e^{3A(r)+W(r)}, \quad (4)$$

$$L(r_F) = 2 \int_0^{r_F} dr \frac{1}{\sqrt{e^{6A(r)+2W(r)} - e^{6A(r_F)+2W(r_F)} - 1}}. \quad (5)$$

Accordingly, the figure 11 in the paper should be replaced by figure 1. The two main differences between the old and the new figures are:

- A non-negligible change in the horizontal scale.
- A zero branch (disconnected surface) exists now for the perpendicular case instead of the parallel case.

Besides the above, the main conclusions of the section remain valid.

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References

- [1] U. Gürsoy, M. Järvinen, G. Nijs and J.F. Pedraza, *Inverse Anisotropic Catalysis in Holographic QCD*, *JHEP* **04** (2019) 071 [[arXiv:1811.11724](https://arxiv.org/abs/1811.11724)] [[INSPIRE](https://inspirehep.net/literature/1811172)].