**Erratum: Black hole perturbation in the most general scalar-tensor theory
with second-order field equations: The odd-parity sector
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Tsutomu Kobayashi, Hayato Motohashi, and Teruaki Suyama
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The last term of a_1 in Eq. (14) in the published version of the original paper has a typo and the correct expression is

$$a_1 = \frac{\ell(\ell+1)}{r^2} \left[\frac{d}{dr} \left(r \sqrt{\frac{B}{A}} \mathcal{H} \right) + \frac{\ell^2 + \ell - 2}{2\sqrt{AB}} \mathcal{F} + \frac{r^2}{\sqrt{AB}} \mathcal{E}_A \right]. \quad (14)$$

The effective potential $V(r)$ given in Eq. (24) in the published version of the original paper contains a typo: it omitted a term $-\frac{A'^2}{16A^2}$. The correct equation is given by

$$V(r) = -\frac{1}{16} \left[\frac{A'^2}{A^2} + 4 \frac{A'}{A} \left(\frac{\mathcal{F}'}{\mathcal{F}} + \frac{\mathcal{H}'}{\mathcal{H}} + \frac{3}{r} \right) + 3 \frac{B'^2}{B^2} + 4 \left(\frac{B'}{B} \frac{\mathcal{F}'}{\mathcal{F}} + \frac{B'}{rB} - \frac{B''}{B} + \frac{10\mathcal{F}}{Br^2\mathcal{H}} \right) - 4 \left(3 \frac{\mathcal{F}'^2}{\mathcal{F}^2} - \frac{2\mathcal{F}''}{\mathcal{F}} + \frac{4\mathcal{F}'}{r\mathcal{F}} + \frac{2\mathcal{H}'}{r\mathcal{H}} + \frac{10}{r^2} \right) \right]. \quad (24)$$

Equations (A1), (A3)–(A5) in the published version of the original paper also contain some typos. They should be

$$\begin{aligned} \mathcal{E}_A := & K + B\phi'X'G_{3X} - 2XG_{3\phi} + \frac{2}{r} \left(\frac{1-B}{r} - B' \right) G_4 + \frac{4B}{r} \left(\frac{1}{r} + \frac{X'}{X} + \frac{B'}{B} \right) XG_{4X} + \frac{8B}{r} XX'G_{4XX} \\ & - B\phi' \left(\frac{4}{r} + \frac{X'}{X} \right) G_{4\phi} + 4XG_{4\phi\phi} + 2B\phi' \left(\frac{4}{r} - \frac{X'}{X} \right) XG_{4\phi X} + \frac{B\phi'}{r^2} \left[(1-3B) \frac{X'}{X} - 2B' \right] XG_{5X} \\ & - \frac{2}{r^2} B^2\phi'XX'G_{5XX} - \frac{2}{r} \left[\frac{1+B}{r} + 2B \frac{X'}{X} + B' \right] XG_{5\phi} - \frac{4}{r} B\phi'XG_{5\phi\phi} + \frac{4B}{r} \left(\frac{1}{r} - \frac{X'}{X} \right) X^2G_{5\phi X}, \end{aligned} \quad (A1)$$

$$\begin{aligned} \mathcal{E}_C := & K + 2XG_{3\phi} - X(B'\phi' + 2B\phi'')G_{3X} - \left[\frac{1}{r} \sqrt{\frac{B}{A}} \left(r \sqrt{\frac{B}{A}} A' \right)' + \frac{B'}{r} \right] G_4 - B\phi' \left(\frac{2}{r} + \frac{A'}{A} + \frac{B'}{B} + 2 \frac{\phi''}{\phi'} \right) G_{4\phi} \\ & + BX \left(-\frac{A'^2}{A^2} + \frac{2B'}{rB} + \frac{A'B'}{AB} + \frac{2(A' + rA'')}{rA} \right) \left(G_{4X} - \frac{1}{2} G_{5\phi} \right) + BX' \left(\frac{2}{r} + \frac{A'}{A} \right) (G_{4X} - G_{5\phi}) + 4XG_{4\phi\phi} \\ & + 2B\phi' \left(\frac{2}{r} + \frac{A'}{A} - \frac{X'}{X} \right) XG_{4\phi X} + 2r \left(\frac{2}{r} + \frac{A'}{A} \right) XX'G_{4XX} - \frac{B^2\phi'}{2r} \left[2 \frac{A''}{A} - \frac{A'^2}{A^2} + \frac{A'}{A} \left(2 \frac{B'}{B} + 3 \frac{X'}{X} \right) \right] XG_{5X} \\ & - B\phi'X \left(\frac{2}{r} + \frac{A'}{A} \right) G_{5\phi\phi} - \frac{B}{r} \left[2 \frac{X'}{X} - \frac{rA'}{A} \left(\frac{2}{r} - \frac{X'}{X} \right) \right] X^2G_{5\phi X} - \frac{B^2\phi'A'}{rA} XX'G_{5XX}, \end{aligned} \quad (A3)$$

$$\begin{aligned} \mathcal{J} := & \phi'K_X + \left(\frac{4}{r} + \frac{A'}{A} \right) XG_{3X} - 2\phi'G_{3\phi} + 2\phi' \left(\frac{1-B}{r^2} - \frac{BA'}{rA} \right) G_{4X} - \frac{4B\phi'}{r} \left(\frac{1}{r} + \frac{A'}{A} \right) XG_{4XX} - 2 \left(\frac{4}{r} + \frac{A'}{A} \right) XG_{4\phi X} \\ & + \frac{1-3BA'}{r^2} XG_{5X} - \frac{2BA'}{r^2} X^2G_{5XX} - 2\phi' \left(\frac{1-B}{r^2} - \frac{BA'}{rA} \right) G_{5\phi} + \frac{2B\phi'}{r} \left(\frac{1}{r} + \frac{A'}{A} \right) XG_{5\phi X}, \end{aligned} \quad (A4)$$

$$\begin{aligned}
\mathcal{S} := & -K_\phi + 2XG_{3\phi\phi} - B\phi'X'G_{3\phi X} - \left[\frac{B}{2} \left(\frac{A'}{A} \right)^2 + \frac{2}{r} \left(\frac{1-B}{r} - B' \right) - \frac{B}{2} \left\{ 2\frac{A''}{A} + \frac{A'}{A} \left(\frac{4}{r} + \frac{B'}{B} \right) \right\} \right] G_{4\phi} \\
& + B \left[\frac{X'}{X} \left(\frac{4}{r} + \frac{A'}{A} \right) + \frac{4}{r} \left(\frac{1}{r} + \frac{A'}{A} \right) \right] XG_{4\phi X} + 2 \left(\frac{1-B}{r^2} - \frac{B}{r} \frac{A'}{A} \right) XG_{5\phi\phi} - \frac{B\phi'}{r^2} \left(\frac{X'}{X} + B \frac{A'}{A} \right) XG_{5\phi X}. \tag{A5}
\end{aligned}$$

We used these correct equations throughout the analysis in the original paper, and thus the results of the published version of the original paper are unchanged. We also clarify that in Eqs. (A2), (A4)–(A6) in the accompanying paper [1] for even mode perturbations, the corrections have already been reflected.

[1] T. Kobayashi, H. Motohashi, and T. Suyama, *Phys. Rev. D* **89**, 084042 (2014).