Erratum: Exact summation of leading logs around $T\bar{T}$ deformation of $O(N+1)$-symmetric 2D QFTs

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In our paper by carelessness we employed the incorrect definition for the constant $1/G$ describing a deviation from the $TT$-perturbed theory. The equation (1.5) must read:

$$\frac{1}{G} = 2g_1 + g_2.$$  \hfill (1.1)

The same misprint occurs in the text in the paragraph below eq. (1.6).

The definition of $1/G$ affects the exertions for the tree-level coefficients $\omega^{0,T}_{1,0}$ listed in eq. (2.8). The first 3 lines of (2.8) must read:

$$\begin{align*}
\omega^{0,T}_{1,0} &= \omega^{0,R}_{1,0} = -4\lambda G + (N + 3); \\
\omega^{1,T}_{1,0} &= -\omega^{0,R}_{1,0} = -4\lambda G + 1; \\
\omega^{2,T}_{1,0} &= \omega^{2,R}_{1,0} = -4\lambda G + 3.
\end{align*} \hfill (1.2)$$

The tree-level contribution into the isospin-0 transmission amplitude in the leading logarithmic (LL) approximation in (2.16) is altered. The corresponding equation must look as

$$M^{0,T}(s) = \frac{s}{F^2}(N - 1) + s^2 \left(-4\lambda + \frac{1}{G}(N + 3)\right) + \frac{s^2}{G} \Omega \left(\frac{s}{4\pi G} \ln \left(\frac{\mu^2}{s}\right), \frac{G^2}{s F^2}\right).$$  \hfill (1.3)

The tree-level contribution into the LL resummed amplitude for the pure $TT$ deformation has to be modified in eq. (4.2) and (4.6). The equation must (4.2) must read as

$$M(s) = \frac{s}{F^2}(N - 1) - 4s^2\lambda + \frac{s}{F^2}(N - 1) \Omega^{TT} \left(\frac{1}{4\pi F^2} \ln \left(\frac{\mu^2}{s}\right)\right);$$  \hfill (1.3)

respectively the eq. (4.6) takes the form

$$M(s) = -4s^2\lambda + \frac{s}{F^2}(N - 1) \left(\frac{1}{1 - \frac{(N-2)}{4\pi F^2} \ln \left(\frac{\mu^2}{s}\right)}\right) = -4s^2\lambda + \frac{s}{F^2(s)}(N - 1).$$

A similar modification is also to be performed in eq. (4.18). It must read as

$$M(s) = -4s^2\lambda + \frac{s}{F^2}(N - 1) \left(\frac{1}{1 - \frac{(N-2)}{4\pi F^2} \ln \left(\frac{\mu^2}{s}\right)}\right)$$

$$+ \frac{s^2}{G} \left[\left(\frac{N}{N+3} + \frac{(N-1)(N+2)}{N} \left(\frac{1}{1 - \frac{(N-2)}{4\pi F^2} \ln \left(\frac{\mu^2}{s}\right)}\right)^{\frac{2N}{N+2}} - 1\right)\right] + O \left(\frac{1}{G^2}\right).$$  \hfill (1.4)
Finally, the expressions for the transmission and reflection leading log amplitudes for all isospin channels (B.1) must read as:

\[ M_{I,T}^{0}(s) = \frac{s}{F^2} (N-1) - 4s^2 \lambda + \frac{s^2}{G} (N+3) + \frac{s^2}{G} \Omega \left( \frac{s}{4\pi G} \ln \left( \frac{\mu^2}{s} \right), \frac{G}{sF^2} \right); \]

\[ M_{I,T}^{1}(s) = \frac{s}{F^2} - 4s^2 \lambda + \frac{s^2}{G} \Omega \left( -\frac{s}{4\pi G} \ln \left( \frac{\mu^2}{s} \right), -\frac{G}{sF^2} \right); \]

\[ M_{I,T}^{2}(s) = -\frac{s}{F^2} - 4s^2 \lambda + \frac{3s^2}{G} \]

\[ -\frac{2s^2}{(N+2)(N-1)G} \left[ \Omega \left( \frac{s}{4\pi G} \ln \left( \frac{\mu^2}{s} \right), \frac{G}{sF^2} \right) - \frac{N}{2} \Omega \left( -\frac{s}{4\pi G} \ln \left( \frac{\mu^2}{s} \right), -\frac{G}{sF^2} \right) \right]; \]

\[ M_{I,R}^{T}(s) = (-1)^I M_{I,T}^{T}(s). \]

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