Erratum: Anomalous Processes with General Waiting Times: Functionals and Multipoint Structure [Phys. Rev. Lett., 115, 110601 (2015)]

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In the Letter, we use Eqs. (18,21) to derive the two-point correlation function of a continuous-time random walk, formulated as the subordinated process $Y(t) = X(S(t))$, where S is the time-change defined in Eq. (2) and X is a normal diffusive process. We assume that X has a two-point correlation function in the stationary regime of the form $\langle X(s_1)X(s_2)\rangle = H(s_2 - s_1)$. In Eq. (23) we calculate the quantity $\langle Y(t_1)Y(t_2)\rangle$ for $t_2 \geq t_1$. However, the Laplace transform of the function f_2 needs to be corrected as

$$\widetilde{f}_2(\lambda) = \frac{\Phi(\lambda)}{\lambda} H_0 - \frac{[\Phi(\lambda)]^2}{\lambda} \widetilde{H}(\Phi(\lambda)),$$

where $H_0 = H(0)$. The term proportional to H_0, that is missing in the manuscript, is important as it accounts for trapping events in the trajectories of the anomalous diffusing particle for which $S(t_2) = S(t_1)$. Such events need to be included not only when $t_2 = t_1$, but also for $t_2 > t_1$. As a sanity check, we discuss the case $\Phi(\lambda) = \lambda$ (Brownian limit), i.e., $K(t) = 1$. In this case, we find $\widetilde{f}_1(\lambda) = \widetilde{H}(\lambda)$ and $\widetilde{f}_2(\lambda) = H_0 - \lambda\,\widetilde{H}(\lambda)$, i.e., $f_1(t) = H(t)$ and $f_2(t) = -\partial_t H(t)$, such that we have $\langle Y(t_1)\,Y(t_2)\rangle = H(t_2) - \int_{t_2-t_1}^{t_2} \frac{\partial}{\partial s} H(s)\,\mathrm{d}s = H(t_2) - [H(t_2) - H(t_2 - t_1)] = H(t_2 - t_1)$, which correctly recovers the correlation of the process X.

Eq. (24b) also needs to be amended accordingly. The correct equation is

$$f_2(t) = \frac{\sigma}{\gamma - \mu^\alpha}[-\mu^\alpha + \gamma g(\alpha, \gamma, \mu; t)] = \gamma f_1(t),$$

using Eq. (24a) in the last step. We remark that the theoretical lines plotted in Fig. 1(b),(c) are obtained by Laplace inverse transform of Eqs. (18,21) and are thus correct. Furthermore, we highlight that the corrections above do not affect the validity or the relevance of our general results.