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The original article[1] contains a few errors and misprints. We list and correct them as follows:

(1) Long and short captions above the speckle patterns in Fig. 1(d) need to be swapped. The correct Fig. 1 is shown.

(2) Equation (A3) should be $\langle I_{r,S}(t)\rangle = \sqrt{\langle \tilde{I}^2_{r,S}(t)\rangle} = I_0$.

(3) In the paragraph below Eq. (A12), $1/\{N$ should be replaced by $1/N$.

(4) The denominator of Eq. (A13) should have a square. The correct Eq. (A13) should be

$$\hat{\gamma}^2 = \frac{\langle (S_r - \langle S_r\rangle)^2\rangle_{finite}}{\langle S_r\rangle^2_{finite}}.$$

(5) The purpose of Eq. (A14) is to calculate the error of the variance. In other words, it is to calculate $V\left((S_r - \langle S_r\rangle)^2\right)$, not $V\left(\gamma^2_{up}\right) = V\left(\langle (S_r - \langle S_r\rangle)^2\rangle\right)$. The correct line 1 in Eq. (A14) should be

$$V\left((S_r - \langle S_r\rangle)^2\right) = \langle (S_r - \langle S_r\rangle)^4\rangle - \langle (S_r - \langle S_r\rangle)^2\rangle^2.$$

(6) Equation (A30) line 1 and line 2 have typos. The correct line 1 and line 2 in Eq. (A30) should be

$$\begin{aligned} V\left(\tilde{G}_2(t)\right) &= \langle \tilde{G}_2(t)^2\rangle - \langle \tilde{G}_2(t)\rangle^2 \\ &= \frac{1}{T^2}\left\langle \int_0^T \int_0^T \alpha^4 \tilde{I}_r(t_1)\tilde{I}_r(t_1-t)\tilde{I}_r(t_2)\tilde{I}_r(t_2-t)dt_1dt_2\right\rangle \\ &\quad - \langle \tilde{G}_2(t)\rangle^2. \end{aligned}$$

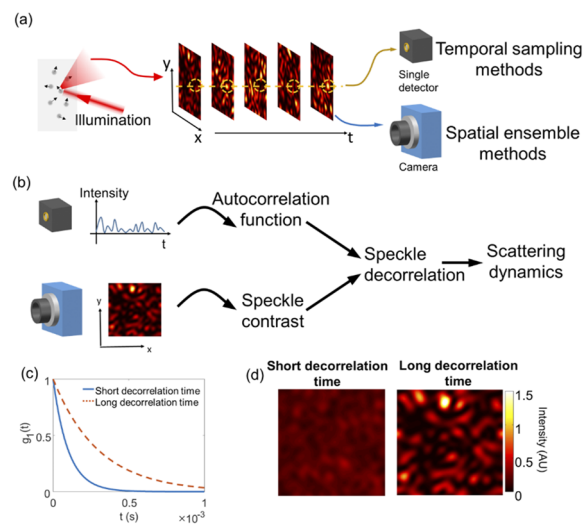

FIG. 1. An overview of the scattered light dynamics measurement. (a) After the illumination light interacts with the dynamic scatterers, the scattered light forms a set of dynamic speckle patterns. Temporal sampling methods usually use a high speed detector to record the intensity temporal fluctuation, while speckle ensemble methods usually use a camera sensor to record the speckle patterns. (b) Temporal sampling methods calculate the autocorrelation function of the recorded intensity fluctuation to obtain the speckle decorrelation time. Speckle ensemble methods calculate the speckle contrast and use mathematical models to obtain the speckle decorrelation time. In both methods, the calculated speckle decorrelation time is used to infer the scattering dynamics. (c) Examples of field decorrelation functions with short and long decorrelation times in temporal sampling methods. (d) Examples of speckle frames with a short and a long decorrelation times in speckle ensemble methods.

(7) In Eq. (A36), N_T should be replaced by N_τ.

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REFERENCE

[1] J. Xu, A. K. Jahromi, and C. Yang, "Diffusing wave spectroscopy: A unified treatment on temporal sampling and speckle ensemble methods," APL Photonics **6**, 016105 (2021).