Correction to Eq. 17

Equation 17 in my article "Revisiting the method of cumulants for the analysis of dynamic light-scattering data", *Applied Optics* **40**, p 4087 (2001) is out by a factor of two. The correct derivation is as follows.

The intensity-intensity time autocorrelation function is given by *[Eq. 2]*

$$g^{(2)}(\tau) = B + \beta\left[g^{(1)}(\tau)\right]^2 \quad . \tag{1}$$

In the cumulant expansion, the logarithm of $g^{(1)}$ is expanded as *[Eq. 16]*

$$\ln\left[g^{(1)}(\tau)\right] \equiv K(-\tau,\Gamma) = -\bar{\Gamma}\tau + \frac{\kappa_2}{2!}\tau^2 - \frac{\kappa_3}{3!}\tau^3 + \frac{\kappa_4}{4!}\tau^4 \quad \ldots \quad . \tag{2}$$

To take advantage of this form and use a linear least-squares method to fit these parameters to the data, take the logarithm of the square root of Eq. 1 with $B = 1$ and make the substitution

$$\ln\sqrt{g^{(2)}(\tau) - 1} = \ln\left(\sqrt{\beta}\left[g^{(1)}(\tau)\right]\right) \tag{3}$$

$$= \frac{\ln\beta}{2} - \bar{\Gamma}\tau + \frac{\kappa_2\tau^2}{2!} - \frac{\kappa_3\tau^3}{3!} + \ldots \quad . \tag{4}$$

or *[revised Eq. 17]*

$$\ln\left[g^{(2)}(\tau) - 1\right] = \ln\beta + 2\left(-\bar{\Gamma}\tau + \frac{\kappa_2\tau^2}{2!} - \frac{\kappa_3\tau^3}{3!} + \ldots\right) \quad . \tag{5}$$

Equation 18 is correct as written.