Erratum: Coherent control of 40-THz optical phonons in diamond using femtosecond optical pulses [Phys. Rev. B **101**, 174301 (2020)]

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The purpose of this erratum is to correct a parameter error in our recently published paper [1]. The correct parameters that should be substituted into the following equation:

$$E_1(t) = \sum_{k=1}^5 E_k \exp\left(-\frac{t^2}{\sigma_k^2}\right) \cos[2\pi(\Omega_k + \theta t)t] \quad (4)$$

are $[E_k, \Omega_k(1/\text{fs}), \sigma_k(\text{fs})] = (0.137, 0.432, 20.129), (0.183, 0.405, 30.480), (0.305, 0.379, 26.099), (0.238, 0.354, 26.664),$ and $(0.137, 0.335, 30.597)$, where E_k , Ω_k , and σ_k are the ratio of the electric-field strengths, the optical frequency, and the pulse width of each component.

We converted the intensity of the spectrum $I(\lambda)$ [Fig. 2(a) in the original paper] into the electric-field spectrum $E(\Omega)$ and then fitted $E(\Omega)$ using five Gaussian curves, where λ is the wavelength and Ω is the optical frequency. The fitted parameters of the electric-field spectrum $E(\Omega)$ are then converted into the parameters of the electric field of the pulse $E(t)$. In the parameter conversion above, we used the equations that were obtained via Fourier transformation of the Gaussian pulse shape.

Figure 2(b) shows the electric-field intensity characteristic generated from the five Gaussian curves when the correct parameters were used; Fig. 2(b) is modified to match Fig. 2(b) in the original paper. The phonon amplitude that was simulated using these parameters was also recalculated, and the results are shown in Fig. 5; Fig. 5 is modified to match Fig. 5 in the original paper. These figures are almost identical to the corresponding figures in the published paper.

FIG. 2. (b) Electric-field intensity characteristic generated from the five Gaussian curves using the correct parameters.

FIG. 5. (a) The measured amplitude of the controlled oscillation after pump 2 on the pulse overlap region. (b) The calculated phonon amplitude for all paths. (c) The calculated phonon amplitude for paths A and B. (This is the same caption that was given for the original Fig. 5.)

This erratum does not affect any of the conclusions presented in the published paper.

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- [1] T. Kimata, K. Yoda, H. Matsumoto, H. Tanabe, F. Minami, Y. Kayanuma, and K. G. Nakamura, [Phys. Rev. B **101**, 174301 \(2020\)](#).