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Temporal mode selectivity by frequency conversion in second-order nonlinear optical waveguides: erratum

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Abstract: We correct typographical errors in four equations showing the integral forms of the equations of motion and the corresponding perturbative approximation. Subsequently presented derivations, results, and conclusions remain unchanged.

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References and links

1. D. V. Reddy, M. G. Raymer, C. J. McKinstrie, L. Mejling, and K. Rottwitt, "Temporal mode selectivity by frequency conversion in second-order nonlinear optical waveguides," *Opt. Express* **21**, 13840–13863 (2013).

In Section 3 of article [1], we presented the integral forms of the coupled-mode equations governing pulsed, quantum frequency conversion in single-mode $\chi^{(2)}$ -nonlinear waveguides in Eqs. 9a and 9b. The time-argument t in the function $\kappa(z', t)$ is missing a prime and a subscript in both equations. The correct equations should read:

$$A_r(L, t) = A_r(0, t - \beta_r L) + i \int_0^L dz' \kappa(z', t'_r) A_s(z', t'_r), \quad 9a$$

$$A_s(L, t) = A_s(0, t - \beta_s L) + i \int_0^L dz' \kappa^*(z', t'_s) A_r(z', t'_s). \quad 9b$$

Additionally, Eqs. 10a and 10b show the same equations in the perturbative limit. The time arguments of the functions in the integrand need to be modified thusly:

$$A_r(L, t) \approx A_r(0, t_r) + i \int_0^L dz' \kappa(z', t'_r) A_s(0, t_r + \beta_{rs} z'), \quad 10a$$

$$A_s(L, t) \approx A_s(0, t_s) + i \int_0^L dz' \kappa^*(z', t'_s) A_r(0, t_s - \beta_{rs} z'). \quad 10b$$

All the other text, equations, figures, results, and conclusions of the article remain unaffected. We thank Nicolás Quesada for spotting the typographical errors in these four equations.