Erratum: Temporal dissipative solitons in a three-level atomic medium confined in a photonic-band-gap fiber [Phys. Rev. A **91, 013828 (2015)]**

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The parameter G should be corrected to

$$G = \frac{c_1 + c_2 \Omega_c^2 + c_3 \Omega_c^4}{\gamma_{23} \gamma_{33} [4(\Delta + i\gamma_{12})(\delta_p - i\gamma_{13}) + \Omega_c^2] [4(\Delta - i\gamma_{12})(\delta_p + i\gamma_{13})\Omega_c + \Omega_c^3]^2},$$

$$c_1 = 32(\Delta - i\gamma_{12})^2(\Delta + i\gamma_{12})\gamma_{13}(\delta_c^2 + \gamma_{23}^2)\gamma_{33},$$

$$c_2 = -8i(i\Delta + \gamma_{12})[12(\Delta^2 + \gamma_{12}^2)\gamma_{13}\gamma_{23} + \{\delta_c[\gamma_{12}(\delta_p + \delta_c - i\gamma_{13}) - 2\Delta\gamma_{13}]$$

$$+ [\Delta(\delta_p - i\gamma_{13}) + 2\gamma_{12}\gamma_{13}]\gamma_{23} + \gamma_{12}\gamma_{23}^2\}\gamma_{33}],$$

$$c_3 = 2\{12\Delta\gamma_{12}\gamma_{23} + \Delta(\gamma_{13} + \gamma_{23})\gamma_{33} + \gamma_{12}[-(\delta_p + \delta_c)\gamma_{33} - 2i\gamma_{23}(6\gamma_{12} + \gamma_{33})]\}.$$

This correction only affects the nonlinear parameters γ_r and γ_i in a way that affects the graphs of Fig. 6, whose corrected forms are shown here.

If we consider fiber 2 and case 1, there are Δ 's for which the equation parameters allow stable solitons. As an example, we consider $\Delta = 15 \times 10^9 \text{ s}^{-1}$ and $\Omega_c^p = 7 \times 10^{11} \text{ s}^{-1}$ which gives $s = 1$, $D = 1$, $\sigma = 0.004$, and $\nu = 0.16$. If we further consider $\tau_0 = 50 \text{ ps}$, we get $\alpha = 0.16$ and $\xi = -0.07$. For this set of parameters, the pulse solution derived above has an amplitude $A = 1.3$ and chirp parameter $d = 9.5$. In this case, the background instability was only significant around $z = 2.6 \text{ m}$. Note that this dissipative soliton should have a peak power of 6.5 mW since $\gamma_r = 15 \times 10^3 \text{ W}^{-1} \text{ m}^{-1}$ and will propagate at 1.9% of the vacuum light velocity.

FIG. 6. Dependence of σ with Δ as calculated using $\sigma = -\text{Im}[G(\Omega_c^{\text{eff}})]/|\text{Re}[G(\Omega_c^{\text{eff}})]|$, for (a) case 1 using $\Omega_c^{\text{eff}} = 7 \times 10^{11} \text{ s}^{-1}$ and (b) case 2 using $\Omega_c^{\text{eff}} = 7 \times 10^{10} \text{ s}^{-1}$.