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Corrigendum: The effects of three-dimensional defects on one-way surface plasmon propagation for photonic topological insulators comprised of continuum media

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This Article contains errors. In the Results section, Equation (7),

$$\frac{\gamma_m}{\epsilon_m} + \frac{\gamma_p}{\epsilon_{eff}} = i \frac{\epsilon_{12} k_x}{\epsilon_{11} \epsilon_{eff}}$$

should read:

$$\frac{\gamma_m}{\epsilon_m} + \frac{\gamma_p}{\epsilon_{eff}} = -i \frac{\epsilon_{12} k_x}{\epsilon_{11} \epsilon_{eff}}$$

In the Supplementary Information, Equation (40),

$$\lim_{k \rightarrow \infty, \gamma \rightarrow 0} (A_{n, \varphi=0} k) = \operatorname{Re} \left\{ \frac{i \beta_{12}(k)}{\beta_{11}(k)} \right\}_{\omega_n = |\omega_c|} = \lim_{\gamma \rightarrow 0} \frac{-2\gamma \omega_c^2 \omega_p^2}{1 + 2\gamma \omega_c^2 \omega_p^2} = 0$$

should read:

$$\lim_{k \rightarrow \infty, \gamma \rightarrow 0} (A_{n, \varphi=0} k) = \operatorname{Re} \left\{ \frac{i \beta_{12}(k)}{\beta_{11}(k)} \right\}_{\omega_n = |\omega_c|} = -1$$

Additionally in the Supplementary Information, Equation (42),

$$C_n = 0 - 1 = -1$$

should read:

$$C_n = -1 - 1 = -2$$

Note that the sum of the Chern numbers appears to be -1 . As detailed in supplementary reference [1], to predict edge states in general for continuum media, one should compute Chern numbers for an “interpolated material response”. This means, for example, that to see bulk-edge correspondence for the magnetized plasma and a Drude metal interface, we should define a function $\epsilon(T)$ where T varies from 0 to 1, such that when $T=0$ we obtain the permittivity of the magnetized plasma, and when $T=1$, we obtain the Drude metal. Then, one needs to compute the topological numbers for $T=1^-$ and $T=0^+$. With this model, we obtain one additional low frequency band for the magnetized plasma, very near $\omega=0$, having Chern number $+1$ which means the gap Chern number is still -1 (as indicated in page 3, main text).

Furthermore, the label “ $C_n = -2$ ” in Figure 1b is incorrectly given as “ $C_n = -1$ ”. The correct Figure 1b appears below as Figure 1.

Figure 1.

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