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Microscopic analysis of the energy, momentum and spin distributions in a surface plasmon-polariton wave: erratum

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Abstract: We correct inessential mistakes in equations of the recently published paper [Opt. Mater. Express **11**, 2165 (2021)]. The mistakes do not affect the numerical results and conclusions of the paper.

Four misprints are detected in equations of our paper [1]:

(1) The 1st Eq. (39) (Section 3.2, p. 2178) erroneously contains the coefficient "g" which should be replaced by "$1/8\pi$" so that the correct Eq. (39) reads:

$$\mathbf{p}^F = \mathbf{z}p^F = \frac{1}{8\pi c}\mathrm{Re}(\mathbf{E}^*\times\mathbf{H}), \quad p^F = \frac{1}{8\pi c}E_x^*H_y. \tag{39}$$

(2) In the unnumbered equation at the top of p. 2181 (Section 3.3), also "g" should be replaced by "$1/8\pi$" so that the correct form is as follows:

$$\mathbf{z}p_e^M = \frac{1}{4}\mathbf{z}\,\mathrm{Im}\left(\alpha'_{xx}E_x^*\frac{\partial E_x}{\partial z} + \alpha'_{zz}E_z^*\frac{\partial E_z}{\partial z}\right) \simeq \frac{1}{16\pi}\frac{d\varepsilon_2}{d\omega}\,\mathrm{Im}\,[\mathbf{E}^*\cdot(\nabla)\mathbf{E}]$$

(3) In Eq. (47) (Section 3.2, p. 2179) the "–" sign before the last summand in the brackets should be replaced by "+" so the correct form of Eq. (47) is

$$s_R^M = -\frac{2g}{\omega}\frac{\eta}{\varepsilon_2^2}\frac{\kappa_2}{k_s}\left[e^{2\kappa_2 x} - \left(1+\frac{k_s^2}{\gamma\kappa_2}\right)e^{(\kappa_2+\gamma)x} + \frac{k_s^2}{\gamma\kappa_2}e^{2\gamma x}\right]. \tag{47}$$

(4) In Eq. (71) (Section 3.4, p. 2185), the coefficient "η" was erroneously omitted in the last summand in brackets; the correct form of this equation reads:

$$s = s^F + s_m^M + s_R^M = -\frac{g}{\omega}\frac{\kappa_2}{\varepsilon_2^2 k_s}[(1+\eta)e^{2\kappa_2 x} - 2\eta e^{(\kappa_2+\gamma)x}]. \tag{71}$$

These corrections do not influence the paper's conclusions and the numerical data presented in figures.

References

1. A. Y. Bekshaev, O. V. Angelsky, J. Zheng, S. G. Hanson, and C. Y. Zenkova, "Microscopic analysis of the energy, momentum and spin distributions in a surface plasmon-polariton wave," Opt. Mater. Express **11**(7), 2165–2191 (2021).

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