Corrigendum

SU(2) \times U(1) unified theory for charge, orbit and spin currents
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We omitted some terms in equation (26), which should read

$$
B_3 = -\frac{2m}{\eta h} \left[ \left( \partial_1 \alpha + \partial_2 \beta - \frac{2m}{\hbar} (\alpha x - \beta y) \gamma \right) \tau^1 + \left( \partial_2 \alpha + \partial_1 \beta - \frac{2m}{\hbar} (\alpha y - \beta x) \gamma \right) \tau^2 + \left( \frac{2m}{\hbar}(\alpha^2 - \beta^2) + 2\gamma \right) \tau^3 \right].
$$

Then, the next two equations, (27) and (28), should be replaced by

\begin{align}
 f_1 &= \frac{2\mu B}{\eta} \bar{\sigma} \cdot \partial_1 \vec{B} - \frac{4m\mu B}{\eta h} [\beta (\vec{\sigma} \times \vec{B})_1 + \alpha (\vec{\sigma} \times \vec{B})_2 + \gamma y (\vec{\sigma} \times \vec{B})_3] \\
 &\quad - J_1 B_1^1 - J_2 B_2^1 - J_3 B_3^1, \\
 f_2 &= \frac{2\mu B}{\eta} \bar{\sigma} \cdot \partial_2 \vec{B} + \frac{4m\mu B}{\eta h} [\alpha (\vec{\sigma} \times \vec{B})_1 + \beta (\vec{\sigma} \times \vec{B})_2 + \gamma x (\vec{\sigma} \times \vec{B})_3] \\
 &\quad + J_1 B_1^2 + J_2 B_2^2 + J_3 B_3^2, \\
 f_3 &= \frac{2\mu B}{\eta} \bar{\sigma} \cdot \partial_3 \vec{B}
\end{align}

and

\begin{align}
 f_1 &= -\frac{4m^2}{\eta h^2} (\beta^2 - \alpha^2) J_2^3, \\
 f_2 &= \frac{4m^2}{\eta h^2} (\beta^2 - \alpha^2) J_1^3, \\
 f_3 &= 0.
\end{align}

These corrections do not affect the analysis and result of the original paper.