Erratum: Magnetic focusing of electrons and holes in the presence of spin-orbit interactions

Samuel Bladwell and Oleg Sushkov
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We recently detected an error in the last line of Eq. (25) of the original paper. The line should be
\[ c(\theta) = \frac{1}{3} \tilde{\gamma}_2 \sin(\theta - \phi), \]  
which differs by a factor of 3 compared to the published result. This change leads to the following three corrections to the published results,

(i) The published Fig. 3 should be replaced by the following: left panel corresponding to the upper panel in the published paper, and right panel corresponding to the lower panel.

![Figure 3](image3.png)

**FIG. 3.** Particle trajectories in the focusing out-of-plane magnetic field. Red lines correspond to the spin polarization \( s = +1 \) and blue lines correspond to the spin polarization \( s = -1 \). The value of the “Rashba parameter” is \( \tilde{\gamma}_3 = 0.1 \). Coordinates are given in units of cyclotron radius (17); the injection point is at \( x = y = 0 \). Dashed lines in both panels are identical; these are simple semicircles corresponding to zero in-plane magnetic field. Solid lines account for a nonzero in-plane magnetic field corresponding to \( \tilde{\gamma}_2 = 0.05 \). Solid lines in the left panel are trajectories for the field parallel to the direction of injection, \( \phi = -\pi/2 \). Solid lines in the right panel are trajectories for the field perpendicular to the direction of injection, \( \phi = 0, \pi \).

(ii) The expression for \( \delta_B \) presented after Eq. (28) \( \delta_B \approx -\pi \tilde{\gamma}_2 \tilde{\gamma}_3 \sin \phi \) should be replaced by
\[ \delta_B = \frac{1}{2} \tilde{\gamma}_2^2 \tilde{\gamma}_3^2 \sin^2 \phi. \]

(iii) The published Fig. 4 should be replaced by the following.

![Figure 4](image4.png)

**FIG. 4.** Dependence of the focusing distance on the in-plane magnetic field. \( \delta_B \) is the relative field contribution to the focusing distance (relative to Rashba). The plots show \( \delta_B \) vs the field orientation angle \( \phi \) for the following values of the ratio of the field spin-orbit parameter over the Rashba spin-orbit parameter \( \tilde{\gamma}_2/\tilde{\gamma}_3 = 0.1, 0.25, 0.4, 0.5 \). At sufficiently small \( \tilde{\gamma}_2/\tilde{\gamma}_3 \) the angular dependence is approximately sinusoidal.

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