

## Erratum to: Gravitational geometric phase in the presence of torsion

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List of corrections in the article [1].

1. Equation (4.9) should read

$$\begin{aligned}\phi_T &= \frac{1}{8} \oint e^i{}_\varphi S^0 \Sigma_i d\varphi = \frac{1}{8} \oint S^0 \vec{\Sigma} \cdot d\vec{r} \\ &= \frac{1}{8} \oint S^0 \Sigma^\varphi \eta \rho d\varphi = \pi \eta \chi \Sigma^2,\end{aligned}\quad (4.9)$$

where we had defined the matrix  $\Sigma^\varphi = -\sin \varphi \Sigma^1 + \cos \varphi \Sigma^2$ .

2. Equation (5.12) must be written in the form

$$\vec{\mathcal{E}} = \mu \hat{\beta} \vec{\Sigma} \times \vec{E} - d\hat{\beta} \vec{\Sigma} \times \vec{B} - i\vec{\xi} + \frac{1}{8} S_0 \vec{\Sigma}. \quad (5.12)$$

3. Equation (6.4) should read

$$\begin{aligned}\Phi &= \oint e^i{}_\mu (-i\xi_i) dx^\mu - \frac{1}{8} \oint S^0 \sigma^\varphi \eta \rho d\varphi \\ &= (1 - \eta) \pi \sigma^3 - \pi \eta \chi \sigma^2,\end{aligned}\quad (6.4)$$

where  $\sigma^\varphi = -\sin \varphi \sigma^1 + \cos \varphi \sigma^2$ .

4. Due to the change in (6.4) the term  $\frac{\pi}{2} \chi \sigma^3$  in the phases (6.5), (6.6) and (6.7) changes to  $-\pi \eta \chi \sigma^2$ .

We claim that none these corrections affects the physical conclusion of the paper [1].

### References

1. K. Bakke, C. Furtado, J.R. Nascimento, Eur. J. Phys. C **60**, 501 (2009)

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