Errata for
Berry Phases in Electronic Structure Theory:
Electric Polarization, Orbital Magnetization
and Topological Insulators

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p. viii: On line 25, “topics topics” should be replaced by “topics”.

p. 86: Exercise 3.2 should read as follows:

Exercise 3.2 In Sec. 3.1.1 we constructed the parallel-transport gauge
of Eq. (3.9) for the system described by Eq. (3.2). Show that Eq. (3.2)
corresponds to a twisted parallel-transport gauge. There are two other
choices for a twisted parallel-transport gauge starting from the same $|\bar{u}_a\rangle$.
What are they?

p. 95: On the left-hand side of the last line of (3.43), $t_{23}$ should be $t_{20}$.

p. 97: On the left-hand side of the last line of (3.44), $t_{23}$ should be $t_{20}$.

p. 111: In 3.14(b), chain_alt_bp should be chain_alt_bp.py.

p. 151: In Eq. (4.29), the group velocity vector should be $v_k$ (i.e., in bold font).

p. 158: 4.2(b) should be replaced by

Show that $\langle u_{nk}|v_k|u_{n'k}\rangle = \langle u_{nk}|p|u_{n'k}\rangle/m$ for different bands $n \neq n'$.

p. 161: In Eq. (4.51), $d^3k$ should be replaced by $d^3\kappa$.

p. 190: In Eq. (4.93), the sin and cos should be interchanged so that it reads

$\delta = \delta_0 \sin \lambda$,
$\Delta = \Delta_0 \cos \lambda$,

p. 190: Four lines below Eq. (4.93), $\delta$ should be $\delta_0$.

p. 219: In the 5th line of the 2nd paragraph, $\rho_{xx}$ should be $\sigma_{xx}$.

p. 222: In the 8th line of the 2nd paragraph, “It fact” should be “In fact.”

p. 230: On 3rd line from the bottom, “imagin e” should be “imagine”.

p. 283: In Eq. (6.22), $M_{\text{DOS}}$ should be $M_{\text{DOS}}$.

p. 293: Eq. (6.32) was missing a factor of $\mathcal{E}_\nu$; it should read
\[ |u_{nk}\rangle = (1 + \text{i}he_{\nu} T_{nk}^{2} v_{k,\nu}) |u_{nk}^{0}\rangle \]

p. 328: On the 8th line from the bottom, MATLAB should be MATLAB.

To the reader: If you discover additional errors, please report them via email to dhv@physics.rutgers.edu.