Dear copyeditor,

We thank you very much for efficiently handling our manuscript (XW10449B). The corrections are listed below and also annotated in the attached PDF file.

Best wishes,

Shi Wang, Zhongyuan Qi, Bin Xi, Wei Wang, Shun-Li Yu, and Jian-Xin Li

Response to all questions listed in the page proof:

1. In line 20 on page 1, please amend “we find five phases” to “we find five additional phases”.
2. In caption of Fig.4 on page 5, it is correct, both (b) and (c) are the results of stripe A.
3. In line 384 on page 6, please amend “BZ” to “Brillouin Zone (BZ)”;
4. In references on page 12, we have not found the published version of Ref. [18] in any journals. There is only the arXiv version;
5. In references on page 12, we have check that the Ref. [40] is correct and its form in the BibTeX file is also correct.

Q

1. For Ref. [17], it should be “F. Ferrari and F. Becca, Phys. Rev. X **9**, 031026 (2019)”

DOI: 10.1103/PhysRevX.9.031026

URL: <https://link.aps.org/doi/10.1103/PhysRevX.9.031026>

1. For Ref. [19], it should be “A. Kitaev, Ann. Phys. **321**, 2 (2006)”

DOI: 10.1016/j.aop.2005.10.005

URL: <http://www.sciencedirect.com/science/article/pii/S0003491605002381>

1. For Ref. [38], it should be “Y. Li, H. Liao, Z. Zhang, S. Li, F. Jin, L. Ling, L. Zhang, Y. Zou, L. Pi, Z. Yang, J. Wang, Z. Wu, and Q. Zhang, Sci. Rep. **5**, 16419 (2015)”

DOI: 10.1038/srep16419

URL: <https://www.nature.com/articles/srep16419>

1. For Ref. [47], it should be “I. Kimchi, A. Nahum, and T. Senthil, Phys. Rev. X **8**, 031028 (2018)”

DOI: 10.1103/PhysRevX.8.031028

URL: <https://link.aps.org/doi/10.1103/PhysRevX.8.031028>

1. For Ref. [48], it should be “J. Iaconis, C. Liu, G. B. Halász, and L. Balents, SciPost Phys. **4**, 003 (2018)”

DOI: 10.21468/SciPostPhys.4.1.003

URL: <https://scipost.org/10.21468/SciPostPhys.4.1.003>

1. For Ref. [60], it should be “P. A. Maksimov, Z. Zhu, S. R. White, and A. L. Chernyshev, Phys. Rev. X **9**, 021017 (2019)”

DOI: 10.1103/PhysRevX.9.021017

URL: <https://link.aps.org/doi/10.1103/PhysRevX.9.021017>

Other corrections:

1. In line 158 on page 2, please amend “its dual phases” to “its dual phase”;
2. In line 163 on page 2, please amend “we find five phases” to “we find five additional phases”;
3. In line 210 on page 3, please amend “its” to “their”;
4. In line 234 on page 3, please delete “so”;
5. In line 271 on page 4, please delete “as”;
6. In line 294 on page 5, please delete “as”;
7. In line 337 on page 6, please delete “as”;
8. In line 338 on page 6, please delete extra “[” and “]” around Ref. [64];
9. In line 460 on page 7, please amend “the third dimension” to “three-dimensional space”;
10. In the second line of the caption of Fig. 8 on page 8, please amend “conditions” to “condition”;
11. In line 572 on page 9, please amend “five phases” to “five addition phases”;
12. In line 627 on page 10, please amend “conditions” to “condition”.