

Erratum: From triple-point materials to multiband nodal links [Phys. Rev. B 103, L121101 (2021)]

 Patrick M. Lenggenhager , Xiaoxiong Liu, Stepan S. Tsirkin, Titus Neupert, and Tomáš Bzdušek


(Received 22 February 2022; published 18 August 2022)

 DOI: [10.1103/PhysRevB.106.079903](https://doi.org/10.1103/PhysRevB.106.079903)

In this Erratum we fix two errors in the original paper, all concerning material candidates listed in Table I on p. 3:

(1) The reference given in the footnote should be Ref. [68], a follow-up work of us, appearing as Ref. [1] in this Erratum.

(2) The three material candidates Na_2O , CaNaP , and AlN should be replaced by MgH_2O_2 , Na_2LiN , and C_3N_4 , respectively, and C_3N_4 should be listed in the third row from the bottom. Note that the previously listed materials (Na_2O , CaNaP , and AlN) all do host triple points of the predicted type [1], but they do not possess \mathcal{PT} symmetry such that they are not ideal examples for the paper. An in-depth analysis of several materials, including Na_2O , CaNaP , and AlN , appears in Ref. [1].

An updated version of Table I is shown below. These errors do not affect the results or discussions presented in the paper in any way.

TABLE I. Result of the classification of triple points (TPs) in spinless \mathcal{PT} -symmetric models (assumed to be nonmagnetic and symmorphic). The TP species [characterized by the winding number w_{2D} of the two-dimensional (2D) irreducible corepresentation (ICR), and the number N_a of attached NL arcs per gap] depends on the little group \mathcal{G} . The TP is type A if $N_a=0$ (and type B otherwise). For $C_{6(v)}$ the result further depends on the pair of intersecting 2D and one-dimensional (1D) ICRs, where $i \in \{1, 2\}$ for C_{6v} . The notation of the ICRs follows Ref. [8]. TPs with $|w_{2D}| = 2$ carry quaternion charge $q = -1$, and when $N_a=0$, they transform to multiband nodal links under strain. The last column reviews previously reported light-element TP materials.

\mathcal{G}	Pairs of ICRs	$ w_{2D} $	N_a	Type	Material candidates
C_3	(any 2D+1D)	1	3	B	MgH_2O_2 ^a
C_{3v}	(any 2D+1D)	1	3	B	Bernal graphite [2]
C_4	(any 2D+1D)	2	0	A	
C_{4v}	(any 2D+1D)	2	0	A	ZrO [3], Sc_3GaC [4], Na_2LiN ^a
C_6	$(E_2, A), (E_1, B)$	2	0	A	
C_6	$(E_1, A), (E_2, B)$	2	6	B	C_3N_4 ^a
C_{6v}	$(E_1, A_i), (E_2, B_i)$	2	0	A	Li_2NaN [5], TiB_2 [6]
C_{6v}	$(E_2, A_i), (E_1, B_i)$	2	6	B	Na_3N [7]

^aCompound reported and inspected in Ref. [1].

- | | |
|--|--|
| <p>[1] P. M. Lenggenhager, X. Liu, T. Neupert, and T. Bzdušek, <i>Phys. Rev. B</i> 106, 085128 (2022).</p> <p>[2] G. P. Mikitik and Y. V. Sharlai, <i>Phys. Rev. B</i> 73, 235112 (2006).</p> <p>[3] T.-T. Zhang, Z.-M. Yu, W. G. Guo, D. Shi, G. Zhang, and Y. Yao, <i>J. Phys. Chem. Lett.</i> 8, 5792 (2017).</p> <p>[4] Y. Xie, J. Cai, J. Kim, P.-Y. Chang, and Y. Chen, <i>Phys. Rev. B</i> 99, 165147 (2019).</p> | <p>[5] L. Jin, X. Zhang, X. Dai, H. Liu, G. Chen, and G. Liu, <i>J. Mater. Chem. C</i> 7, 1316 (2019).</p> <p>[6] X. Zhang, Z.-M. Yu, X.-L. Sheng, H. Y. Yang, and S. A. Yang, <i>Phys. Rev. B</i> 95, 235116 (2017).</p> <p>[7] L. Jin, X. Zhang, T. He, W. Meng, X. Dai, and G. Liu, <i>Phys. Chem. Chem. Phys.</i> 22, 5847 (2020).</p> <p>[8] C. J. Bradley and A. P. Cracknell, <i>The Mathematical Theory of Symmetry in Solids: Representation Theory for Point Groups and Space Groups</i> (Clarendon, Oxford, 1972).</p> |
|--|--|