

## Erratum: Extending spin ice concepts to another geometry: The artificial triangular spin ice [Phys. Rev. B **85**, 184410 (2012)]

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Recently, we found a bug in the computational code used to evaluate single vertex energies shown in the paper and used to classify different kinds of vertices in different topologies. Thus, the results present in Fig. 2 of the paper are not correct. The correct topologies and energies are shown in the figure below, which replaces Fig. 2 of the paper. In Table I, we also show a correspondence table between the topologies presented in the paper and the correct topologies. Now, the topologies obeying the three-in/three-out ice rules are topologies 1, 2, and 5, and not 1, 3, and 5 as presented in the paper, and topologies 3, 4, and 6 are the monopoles with single charges (with four-in/two-out or two-in/four-out configurations) and not 2, 4, and 6. Care should be taken when reading the paper, and the correspondence table and the corrected figure should be taken into account, especially in the paragraph below Fig. 2 on p. 2 and in the last paragraph of Sec. V. Our results and conclusions remain the same since the change in the topologies' order does not change any of our arguments. Besides, as far as we could see, no bugs were found in the codes used to obtain the remaining results of the paper in such a way that they are expected to be correct.

Another mistake noticed is in the last paragraph of Sec. IV. The sentence “Note, however, that south poles (with four-in/two-out) in this situation would move in the field directions instead of moving against the field, as would be expected by analogy with basic electrostatics,” is wrong. We are dealing with monopoles in field  $\vec{H}$ , and since  $\vec{\nabla} \cdot \vec{H} = -\vec{\nabla} \cdot \vec{M}$ , the south pole is the vertex where four spins point out and two point in and not four in/two out. Then, the magnetic monopoles move in the field direction as can be expected by analogy with basic electrostatics.

We are very grateful to J. P. Morgan for drawing our attention to the error in our calculations.

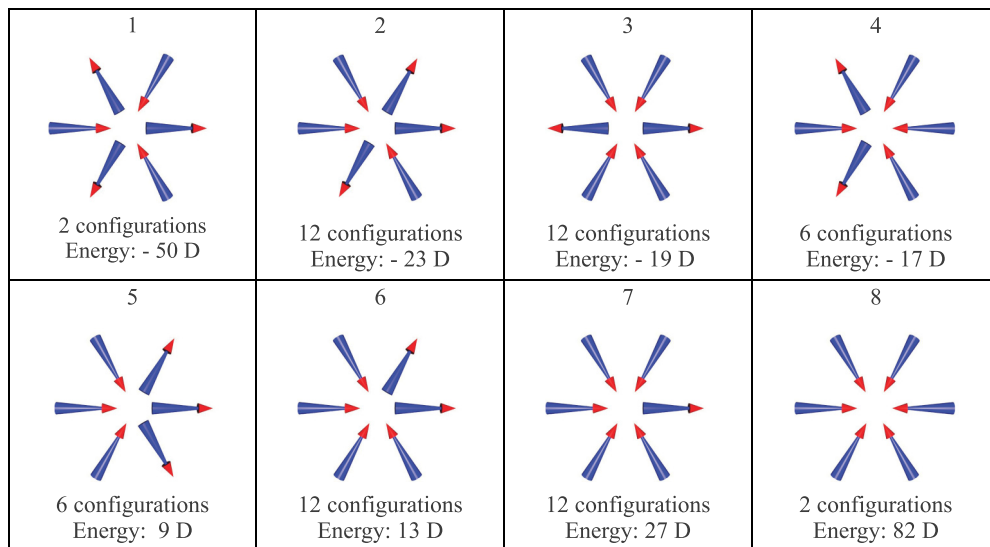


FIG. 2. (Color online) The 64 possible vertices, grouped by increasing energy (left to right) in eight topologies. Vertex types 1, 2, and 5 satisfy the three-in/three-out ice rule, whereas, vertex types 3, 4, and 6 are single magnetic charges. Vertex types 7 and 8 are double- and triple-charged vertices, respectively.

TABLE I. Correspondence between the topologies presented in the paper and the correct topologies.

Old topologies	Correct topologies
1	1
2	4
3	2
4	3
5	5
6	6
7	7
8	8