Topological phases and phase transitions in magnets and ice

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Stellingen

Behorend bij het proefschrift "Topological Phases and Phase Transitions in Magnets and Ice"

1. Though precluded in infinitely large two-dimensional systems, skyrmion lattices can be realized in nanostructures.
   Chapter 1 of this thesis.

2. The realization of the $2q$ phase in antiferromagnets will be experimentally difficult.
   Chapter 2 of this thesis.

3. No function of energy will yield results that can be used to determine whether a system exhibits an infinite-order phase transition.
   Chapter 3 of this thesis.

4. For the F-model, the disordered region has, in some cases, stronger correlations than the ordered region.
   Chapter 4 of this thesis.

5. The skyrmion Hall effect might not be an issue for skyrmion transport in nanowires due to the repulsive nature of the edges.
   S. G. E. te Velthuis et al, Nature Physics **13**, *162-169 (2017).*

6. From an application perspective, antiferromagnets are generally more suitable materials than ferromagnets for skyrmion manipulation.
   X. Zhang, Y. Zhou, and M. Ezawa, Sci. Rep. **6**, *24795 (2016).*

7. In practice, prefactors related to the asymptotic time complexity of an algorithm are equally as important as the order.
   J.-Y. Cai, Z. Fu, and M. Xia, (2017), arXiv:1702.02863 [cs.CC].

8. In their article on the six-vertex model with domain-wall boundary conditions the authors have not corrected for the two-fold degeneracy of the system as is apparent from Figure 11 and onwards.
   L. F. Cugliandolo, G. Gonella, and A. Pelizzola, J. Stat. Mech., P06008 (2015).

9. The outcome of scientifically sound research should be irrelevant when the work is considered for publication.

10. Public relations and educating the public are becoming increasingly important for physicists.

Rick, Keesman,
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