TOWARDS A TOPOLOGICAL PROOF OF THE FOUR COLOR THEOREM VI

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ABSTRACT. Now, we combine two steps: take a graph, fill in the dual graph, then make the inner shell Eulerian. See [1, 2].

Programming was required to build a new data structure as we want only to work with part of the graph. Now we use procedures, where we carry around also a list of vertices on which we do not work, as well as a list of vertices which are already dealt with. In the following example we are only at the very beginning. We have cleaned out the middle vertex. All edges emerging from it have now even degree. Now we will have to enlarge this good region more and more.
In each step, we will take a new vertex on the boundary of the good region and clean out its unit sphere without modifying edges in the original outer graph or good part. That we can do that is assured by our main lemma.

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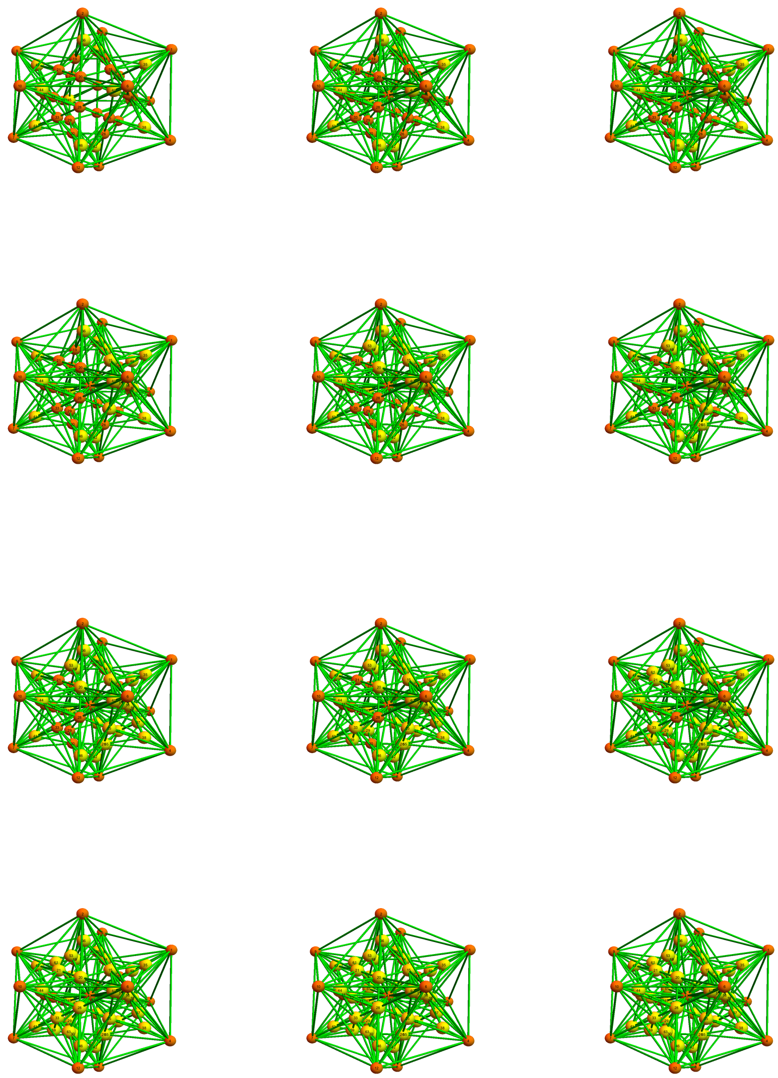

References

[1] O. Knill. Coloring graphs using topology. http://arxiv.org/abs/1410.3173, 2014.
[2] O. Knill. Graphs with eulerian unit spheres. http://arxiv.org/abs/1501.03116, 2015.

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