TOWARDS A TOPOLOGICAL PROOF OF THE FOUR COLOR THEOREM V

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Abstract. Here is an outline of the global proof. See [1, 2].

• Make \( G \) cobordant to \( \overline{G} \), the completed dual graph.
• Now fill in an interior vertex \( v_0 \) and connect to \( \overline{G} \). We have now a ball which has \( G \) as boundary.
• Clean out \( S(v_0) \) to make it Eulerian.
• Take \( x_1 \in V(\overline{G}) \). Its unit sphere \( S(x_1) \) intersects \( G \) in a vertex, edge or triangle. Define \( U_1 = \{ S(x_0) \} \)
• Clean out \( S(x_1) \) to make it Eulerian. Now take an other vertex \( x_2 \) in \( S(x_0) \cap S(x_1) \) and define \( U = (B(x_0) \cap B(x_1)) \cap S(x_2) \).
• Clean out \( S(x_2) \) to make it Eulerian. Continue like this without modifying edges in \( S(x_0) \), nor edges in \( G \).
• We have to complete things in such a way that at any time we have only to complete a region.
REFERENCES