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Wendy Myrvold* (wendym@cs.uvic.ca), Department of Computer Science, University of Victoria, P.O. Box 3055, Stn CSC, Victoria, BC V8W 3P6, Canada. *Algorithms and Obstructions for Graph Embedding*. Preliminary report.

A graph *embeds* on a surface S if it can be drawn on S with no crossing edges. A *topological obstruction* for a surface S is a graph G with minimum degree three that is not embeddable on S but for all edges e , $G - e$ embeds on S . A *minor order obstruction* has the additional property that for all edges e , G contract e embeds on S .

The aim of our research is to find all the obstructions to the torus (a surface that is a sphere with one handle added) and the Klein bottle (a surface that can be created by adding either a twisted handle or two crosscaps to a sphere). This talk discusses techniques for finding these obstructions, and algorithms for embedding graphs then concludes with suggested avenues for future research.

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