Combinatorics Seminar

Wednesday, Jan. 28, 2004

3:00 pm in Hume 331

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Closed 2-cell Embeddings of Graphs Embeddable in the Projective Plane and the Torus

ABSTRACT

A closed 2-cell embedding of a graph G in a surface is an embedding such that the closure of each face is homeomorphic to a closed disk. A long-standing conjecture, the Strong Embedding Conjecture, states that every 2-connected graph has a closed 2-cell embedding in some surface.

The Strong Embedding Conjecture is closely related to another important conjecture, called the Cycle Double Cover Conjecture, which states that every 2-edge connected graph has a set of cycles such that each edge is contained in exactly two of these cycles. A closed 2-cell embedding of a graph implies the cycle double cover of that graph simply by taking the face boundaries as the set of cycles.

In this talk, we discuss the closed 2-cell embeddings in orientable surfaces for graphs embeddable in the projective plane and the torus.