

## Neil Robertson

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### Flexibility of polyhedral embeddings of graphs on a surface

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The following theorem has been established in joint work with Bojan Mohar. Given a surface  $S$ , there is an integer  $f(S)$  such that any 3-connected graph  $G$  admits at most  $f(S)$  combinatorially distinct 3-representative embeddings into  $S$ . In such an embedding all the facial boundaries are simple cycles, and distinct facial cycles meet at most in an edge or vertex. Two such embeddings of  $G$  are distinct if their facial cycles differ. Thus, for the 2-sphere  $f(S) = 1$ , but already the 7-clique has 60 3-representative embeddings on the torus. This talk will discuss the proof of the theorem.

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