Configuration space of 2-cell embeddings of graphs in surfaces and the Genus Log-Concavity Conjecture

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Every 2-cell embedding of a graph in some closed surface can be described (canonically) by specifying local clockwise rotations of edges emanating from each vertex. The set of all such rotation systems on a given graph can be viewed as a large graph, called the configuration space of 2-cell embeddings of the graph. With special emphasis on cubic graphs, the talk will discuss how many embeddings of certain genus can we have. An application towards and against the Genus Log-Concavity Conjecture will be presented. The main part of the talk is joint work with MacKenzie Carr.