Spring Colloquium Series

Symmetries of the Heawood graph and its spatial embeddings

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Abstract: The study of embedded spatial graphs is a generalization of the study of knots and links and has applications to chemistry. In this talk we are interested in the relationship between the automorphisms of a graph and the homeomorphisms of the embeddings of the graph in space. Specifically we would like to know which automorphisms of a given graph can be induced by a homeomorphism of an embedding of the graph in R^3. Such an automorphism is said to be realizable. We will discuss what is known about the classification of realizable automorphisms for certain families of graphs, and will share recent results classifying realizable automorphisms of the Heawood graph.

Keywords: knot theory, embeddings of spatial graphs, topology

Wednesday, May 9, 1:05 - 1:50pm in 3-1616