Hopf Monoids in Set Species

Abstract:

Because of their connections with the representation theory of the symmetric group, Hopf algebras have been used to study the enumerative properties of many combinatorial objects. In this talk we will give an introduction to this topic with the intention of defining Hopf monoids, a generalization that ends up being a better set up for the study of objects like graphs, matroids, posets, and generalized permutahedra.