MARCELO AGUIAR, Cornell University

Double monoids in duoidal categories: a brief tour and an example in geometric combinatorics

The notion of a bimonoid in a braided monoidal category is familiar to Hopf algebraists. We will discuss related but less familiar notions such as that of a double monoid. The ambient setting for the latter is that of a duoidal category. We will introduce these concepts along with examples, with the hope of reaching an example of a $(2, 1)$-monoid in the category of Joyal's species which is of a beautiful geometric and combinatorial nature: it is built out of a class of polytopes called generalized permutahedra.

The talk borrows on various earlier projects done in collaboration with Swapneel Mahajan, Federico Ardila, and Jose Bastidas.