

STRUCTURED COSPANS

JOHN BAEZ

Open systems of many kinds can be treated as morphisms in symmetric monoidal categories. Two complementary approaches can be used to work with such categories: props (which are more algebraic in flavor) and cospan categories (which are more geometrical). In this talk we focus on the latter. Brendan Fong's "decorated cospans" are a powerful tool for treating open systems as cospans equipped with extra structure. Recently Kenny Courser has found a simpler alternative, the theory of "structured cospans". We describe this theory and sketch how it has been applied to a variety of open systems, such as electrical circuits, Markov processes, chemical reactions and Petri nets.

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