

# Thoughts

August 7, 2018 11:09 AM

**Title.** Meta-monoids, meta-Hopf-algebra, meta-paired-Hopf-Algebras, and meta-contractions.

**Idea.** Alexander in detail and with emphasis on structure, hint the rest.

**Title.** Locally Euclidean Knotted Objects, Meta-Hopf Algebras, and Circuit Algebras.

**Abstract.** Seeing that I have nothing to say about operads, I'll talk about other "generalized algebraic structures" that I like. Specifically, I will explain what are locally Euclidean knotted objects and how they form a "meta-Hopf algebra" (along the way explaining what is that latter notion). I will then describe the "circuit algebra" of linearized circuits and explain how to use it to construct a "Yang-Baxter meta-Hopf algebra" which generalizes the Alexander polynomial. I will have no time to explain, yet I'll sketch, how "solvable approximation of semi-simple Lie algebras" lead to more sophisticated Yang-Baxter meta-Hopf algebras which lead to very powerful poly-time computable knot polynomials.