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Assembly of constructible factorization algebras

Friday 20 September 2024 09:00 (1 hour)

Factorization algebras describe the observables of a perturbative QFT, but also algebraic objects such as (A_∞-)algebras, bimodules, and E_n-algebras. As such, they should satisfy certain properties: for instance, it has long been "known"that the assignment taking a stratified manifold to its category of constructible factorization algebras satisfies gluing, i.e., is itself a sheaf. Unfortunately, this and other related facts about factorization algebras have long been "folklore knowledge", but with no proofs available.

These are crucial ingredients for several constructions in the literature, one of them being higher Morita categories. These are many prominent examples of targets of (possibly relative) functorial field theories e.g. for Turaev-Viro theory and Reshetikin-Turaev theory.

In this talk, I will report on recent work with Eilind Karlsson and Tashi Walde, where we close some of these gaps in the literature, including the aforementioned gluing result. I will of course start with the big picture of why we would like such a result.

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