Posites: The Foundation of Factorization Homology

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Abstract

Factorization homology, aka factorization algebras, arises naturally in higher quantization in mathematical physics, providing an elegant categorical formalization of observables of a QFT. Despite the advanced machinery involved in building the theory, factorization algebras can be conveniently defined in the language of multicategories, thanks to the monoidal structures carried by the categories of interest.

Building on previous work of the author, we will establish that at the very core of factorization homology lies the concept of posite, a site whose underlying category is posetal, and we will revisit the theory highlighting new topos-theoretic perspectives.

References

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