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Title: Topological invariants via local-to-global constructions of QFT

Abstract: The relationship between certain topological invariants and quantum field theory (QFT) is one that goes back more than 30 years. Particularly relevant are a certain class of theories called sigma models, whose fields are spaces of maps between manifolds. In this talk we will describe several such models and their quantizations in the BV formalism. Moreover, we will describe how these QFTs encode the topology/geometry of the target manifold. A key tool will be a localization technique which simplifies the construction and quantization of these types of QFT.