

Abstract

We introduce the tensor categories, Drinfeld center and related 3 dimensional topological quantum field theory (TQFT). We introduce a new unified TQFT which encode related algebraic concepts by topological concepts. This led to a short proof of remarkable identity between Reshetikhin-Turaev invariant and Turaev-Viro invariant. Furthermore, we propose perspectives of quantum Fourier analysis and related questions in this unified TQFT based on reflection positivity.