# RE-NORMALIZED TQFTS

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In this talk I will discuss some new Topological Quantum Field Theories (TQFTs) arising from a re-normalization of the Reshetikhin-Turaev quantum invariants. I will start by giving an axiomatic definition of the re-normalized quantum invariants. These invariants distinguish manifolds that the usual R-T invariants can not and lead to a generalized Volume Conjecture. I will give Atiyah's original definition of a TQFT. Then I will explain how the "universal construction" of Blanchet, Habegger, Masbaum and Vogel can be applied to the re-normalized invariants and leads to such TQFTs. I will finish the talk by discussing how these new TQFTs lead to mapping class group representations. These mapping class group representations have interesting properties including the fact that the action of certain Dehn twists have infinite order. Such behavior is in sharp contrast with the usual quantum representations of mapping class groups where all the Dehn twists have finite order. This work is joint with Blanchet, Costantino and Patureau-Mirand.

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