Guo, Meng; Ohmori, Kantaro; Putrov, Pavel; Wan, Zheyan; Wang, Juven
Fermionic finite-group gauge theories and interacting symmetric/crystalline orders via cobordisms. (English) Zbl 1479.81064
Commun. Math. Phys. 376, No. 2, 1073-1154 (2020).

The paper gives a research on many kinds of spin Topological Quantum Field Theories (spin-TQFTs) based on the interacting fermionic Symmetry Protected Topological states with a finite group $G$ symmetry. The works are comprehensive research on this topic. For example, the research provide explicit classification of 't Hooft anomalies of fermionic QFTs in one dimension lower. They also construct new anomalous boundary spin-TQFTs. In general, the results help with the understanding of the spin TQFTs.

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MSC:
81T45 Topological field theories in quantum mechanics
81R25 Spinor and twistor methods applied to problems in quantum theory
81V27 Particle exchange symmetries in quantum theory (general)
55N22 Bordism and cobordism theories and formal group laws in algebraic topology
81T50 Anomalies in quantum field theory
81V72 Fermionic systems in quantum theory
81R05 Finite-dimensional groups and algebras motivated by physics and their representations
53C27 Spin and Spin$^c$ geometry
57R90 Other types of cobordism

Full Text: DOI arXiv

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