

ALGEBRAIC PROPERTIES OF MODULAR TENSOR CATEGORIES AND 3DTFTs

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Abstract: Modular tensor categories (MTCs) play an important role in the study of 3-dimensional topological field theories (TFTs). They possess rich algebraic properties that manifest in the corresponding TFTs—for instance, through invariants of knots and 3-manifolds and representations of the mapping class groups of surfaces. In this talk, we will begin with a brief overview of MTCs and the Reshetikhin–Turaev construction of TFTs. We will then explore two key algebraic properties of MTCs: the congruence property and Galois symmetry. Finally, we will discuss how these properties offer valuable tools for understanding the structure of MTCs and their TFTs.