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*Modular tensor categories from  $SL(2, \mathbb{Z})$  representations*

Modular data is an essential invariant of a modular tensor category, and they enjoy various algebraic properties such as rationality, congruence property and Galois symmetry. In this talk, we use the algebraic properties of modular data, or to be more precise, of the modular group representations to study modular tensor categories. As an example, we will talk about our result on the classification of transitive modular tensor categories and the symmetrization of congruence representations of  $SL(2, \mathbb{Z})$ . This talk is based on joint works with Siu-Hung Ng, Samuel Wilson and Qing Zhang.