THE 2-CATEGORICAL $\mathcal{S}$-MATRIX OF A BRAIDED FUSION 1-CATEGORY IS A CHARACTER TABLE

ALEA HOFSTETTER

The semisimple module categories over a braided fusion 1-category $\mathscr{C}$ form a connected fusion 2-category $\mathbf{Mod}(\mathscr{C})$. Its 2-categorical Drinfeld center is a braided fusion 2-category $\mathfrak{Z}(\mathbf{Mod}(\mathscr{C}))$. To any braided fusion 2-category, Johnson–Freyd and Reutter have associated a matrix-valued invariant, the 2-categorical $\mathcal{S}$-matrix. In this talk, I will apply this 2-categorical $\mathcal{S}$-matrix to $\mathfrak{Z}(\mathbf{Mod}(\mathscr{C}))$ and explain that it reduces to the character table of the Müger center of the braided fusion 1-category $\mathscr{C}$. Furthermore, I will explicitly compute the 2-categorical $\mathcal{S}$-matrix in the example class of $\mathscr{C}$ being the 1-category of G-graded vector spaces with arbitrary braiding and associator for a finite group G. This is based on joint work with Christoph Schweigert.