1135-18-2990 **Marc Keilberg*** (keilberg@usc.edu). *Investigating invariants of, and new categories obtained from,* $\mathrm{Rep}(D(G))$ *via change of braidings.*

The fusion category $\mathrm{Rep}(D(G))$, where $D(G)$ is the Drinfeld double of the finite group $G$, admits canonical braidings which are well-studied and known to yield factorizable modular categories. We describe all other possible braidings in group theoretical terms, and determine when they yield factorizable modular categories.

We then consider the question of when such braidings determine the same modular data as the canonical braidings. This can happen in non-trivial ways, and we demonstrate that it is possible for a braiding to determine inequivalent modular data. In this fashion we obtain new examples of factorizable modular categories.

We conclude by applying the results to a few invariants which can be expressed in terms of the modular data. This yields a number of new identities for the invariants, as well as new relations among the modular data and fusion ring. (Received September 26, 2017)