A class of modular quasiHopf algebras

Geoffrey Mason∗
gem@cats.ucsc.edu

WEB: www.math.ucsc.edu/faculty-research/singleton.php?&singleton=true&cruz_id=gem

We describe a generalization of the twisted quantum double construction associated to a finite group $G$, giving rise to quasiHopf algebras determined by $G$ and some cohomological data. We give necessary and sufficient conditions that these quasiHopf algebras are modular in the sense that the category of finite-dimensional modules is a modular tensor category. Just as the usual twisted quantum doubles of $G$ (conjecturally) describe the fusion rules of holomorphic $G$-orbifolds, these more general quasiHopf algebras appear to describe the fusion rules of certain rational $G$-orbifolds, including the $c = 1$ orbifold theories.

This is joint work with Richard Ng.

∗Mathematics Department, University of California, Santa Cruz, 1156 High Street, Santa Cruz, CA 95064, USA.