

TAMBARA RECONSTRUCTION

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Let C be a monoidal category and M a C -module category. Following Ostrik, Gordon-Power, Mackaay-Mazorchuk-Miemiętz-Tubbenhauer and others, in this setting one can reconstruct M , i.e. find an algebra object A in C (or, more generally, a C -enriched category), such that M is equivalent to the category of A -modules. Reconstruction results tend to require two kinds of assumptions on C and M : finiteness assumptions and closedness or rigidity assumptions. The first may be fixed by instead considering algebra objects and modules in a larger monoidal category C' , e.g. the category of presheaves on C . I will show that even in the absence of closedness or rigidity, M can be reconstructed in an even larger category $\mathbf{Tamb}(C)$ of Tambara modules on C . Generally, $\mathbf{Tamb}(C)$ is difficult to describe explicitly, but, as observed by Pastro-Street, it is closely connected to the Drinfeld double construction. I will report on ongoing work, joint with Tony Zorman, on the applications of the Tambara reconstruction to bialgebras, using the observations of Pastro-Street and results of Shimizu.