

1135-18-2401

**Peter Schauenburg\***, Institut de Mathématiques de Bourgogne, Faculté des Sciences Mirande, 9 avenue Alain Savary, 21000 Dijon, France, and **Michaël Mignard**. *Modular categories are not determined by their modular data.*

A modular category affords a representation of the modular group on its complexified Grothendieck ring, the S- and T-matrices (also known as the modular data) being the images of two generators of the modular group. The most easily accessible modular categories are perhaps the module categories of the Drinfeld doubles of finite groups, and more generally twisted Drinfeld doubles, which are quasi-Hopf algebras associated to a group and a three-cocycle. The modular data is at the basis of the definition of modular categories; it is central to applications in mathematical physics and low-dimensional topology; from a purely algebraic viewpoint, the modular data are simply an all-important structural element of a modular category, of key importance for example for any effort to classify them. We settle the question whether the modular data might in fact already contain all the information on a modular category: It turns out that this can already fail for the module categories of twisted Drinfeld doubles of finite groups; such categories can share the same modular data without being equivalent as modular categories. Apart from these counterexamples, we will also report on the large number of inequivalent twisted Drinfeld doubles which we classified by computer algebraic methods. (Received September 26, 2017)