YVAN SAINT-AUBIN, Université de Montréal

The category of Temperley-Lieb algebras and their fusion product

The Temperley-Lieb algebras $\text{TL}_n(\beta)$ appear in several chapters of mathematics and physics. In the latter, one particular element of a $\text{TL}_n(\beta)$ captures the Boltzmann weights of several statistical models. The family of algebras $\text{TL}_n(\beta)$, $n \geq 1$, was cast into a category by Graham and Lehrer (1998). Independently Read and Saleur (2007) introduced a fusion product on the modules over these algebras, that is an operation (a functor) that maps two modules into a third one. These modules are in general over distinct algebras of the Temperley-Lieb family.

We show that the category of the Temperley-Lieb algebras is braided and that this braiding can be extended naturally to a category of modules over the family for the product introduced by Read and Saleur.

Joint work with J. Belletête.