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*The category of Temperley-Lieb algebras and their fusion product*

The Temperley-Lieb algebras  $TL_n(\beta)$  appear in several chapters of mathematics and physics. In the latter, one particular element of a  $TL_n(\beta)$  captures the Boltzmann weights of several statistical models. The family of algebras  $TL_n(\beta)$ ,  $n \geq 1$ , 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.