

UNCOILED AFFINE ET PERIODIC TEMPERLEY-LIEB ALGEBRAS AND THEIR WENZL-JONES IDEMPOTENTS

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Abstract:

The affine and periodic Temperley-Lieb algebras are families of infinite-dimensional algebras with a diagrammatic presentation. They have been studied in the last 30 years, mostly for their physical applications in statistical mechanics, where the diagrammatic presentation encodes the connectivity property of the models. Most of the relevant representations for physics are finite-dimensional. In this work, we define finite-dimensional quotients of these algebras that we name uncoiled algebras in reference to the diagrammatic interpretation of the quotient and construct a family of Wenzl-Jones idempotents, each of which projects onto one of the one-dimensional modules these algebras admit. We also prove that the uncoiled algebras are sandwich cellular and sketch some of the applications of the objects we defined.

This is joint work with Alexi Morin-Duchesne.