

Algèbres non commutatives, théorie des représentations et fonctions
spéciales
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Non-commutative algebras, representation theory and special functions
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**Morphisms between periodic XXZ spin chains at roots of unity and
broken Schur-Weyl duality**

There are natural commuting actions of the Temperley-Lieb algebra $TLN(q)$ and of the quantum group $Uqsl_2$ on the open XXZ spin- $\frac{1}{2}$ chains. This phenomenon, called quantum Schur-Weyl duality, ceases however to hold for periodic chains where the action of $TLN(q)$ is replaced by an action of the affine Temperley-Lieb algebra $aTLN(q)$. In this talk, we will nevertheless recover part of the duality by showing that all $aTLN(q)$ -morphisms between periodic chains are induced by the action of specific divided powers inside $Uqsl_2$ (for q is a root of unity). This enables us in particular to identify the centralizer of the $aTLN(q)$ -action on the periodic chains and to quantify the commutativity defect between $aTLN(q)$ and $Uqsl_2$ on these chains (work in progress with Yvan Saint-Aubin).