The Center of the Nilcoxeter and 0-Hecke Algebras

Joelle Brichard

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Abstract

We compute the dimensions of the center of the 0-Hecke algebra $\mathcal{H}_n$ and of the Nilcoxeter algebra $\mathcal{NC}_n$ using a calculus of diagrams on the Möbius band. In the case of the Nilcoxeter algebra, this calculus is shown to produce a basis for $Z(\mathcal{NC}_n)$. We conjecture that a basis for $Z(\mathcal{H}_n)$ can also be obtained in this way.