Title: Explicit central elements of quantized Lie algebras

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Abstract: The simplest example of a quantized Lie algebra is $\mathcal{U}_q(\mathfrak{sl}_2)$, and it has a canonical central element called the *Casimir element*. For more general quantized Lie algebras $\mathcal{U}_q(\mathfrak{g})$, where $\mathfrak{g}$ is a simple Lie algebra, there is a formula for computing central elements (see [3]). However, it is not explicitly written in terms of the generators of $\mathcal{U}_q(\mathfrak{g})$.

In the cases of $\mathfrak{g} = \mathfrak{gl}_n, \mathfrak{so}_5, \mathfrak{sp}_4$, there are examples of explicit central elements (see [1, 2, 4], respectively). In this project, we extend these methods to other Lie algebras $\mathfrak{g}$.

References

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