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Graded limits of minimal affinizations

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Let $U_q(Lg)$ be the quantum loop algebra associated with a simple Lie algebra g. Given a dominant integral weight λ of g, a minimal affinization is defined as a "minimal" irreducible module over $U_q(Lg)$ with highest weight λ. (In type A, for example, a minimal affinization is just an evaluation module.) By taking the classical limit of a minimal affinization and taking a pull-back w.r.t. a suitable automorphism, we obtain a graded module over the current algebra $g \otimes \mathbb{C}[t]$, which is called the graded limit. By studying the graded limits, we obtain several information on structure of minimal affinizations. (Such an approach was first started by Chari and Moura). In this talk, we will give a multiplicity formula (as a $U_q(g)$-module) for a minimal affinization in type BC (and partially in type D) using this approach.

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