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Weyl Modules for Current Lie Superalgebras

The notion of a Weyl module for classical affine algebras, a type of infinite dimensional Lie algebra, was introduced in 2001 by Chari and Pressley. These modules are universal, finite dimensional highest weight modules. We expand these ideas to infinite dimensional Lie superalgebras; in particular to Lie superalgebras of the form $\mathfrak{g} \otimes \mathbb{C}[t]$, where $\mathfrak{g}$ is basic classical. We prove that these Weyl modules are universal, finite dimensional, highest weight $\mathfrak{g}$-modules for $\mathfrak{g} = \mathfrak{sl}_2 \otimes \mathbb{C}[t]$, $\mathfrak{g} = \mathfrak{gl}(1|1) \otimes \mathbb{C}[t]$, and $\mathfrak{g} = \mathfrak{osp}(1|2) \otimes \mathbb{C}[t]$. These three particular cases can be used to generalize the result to $\mathfrak{g} \otimes \mathbb{C}[t]$, where $\mathfrak{g}$ is any basic classical Lie superalgebra. This is part of a work in progress which will be part of my PhD thesis at Queen's University.