Kawamoto, Naoki; Mitsukawa, Atsushi; Nam, Ki-Bong; Wang, Moon-Ok

The automorphisms of generalized Witt type Lie algebras. (English) Zbl 1038.17015

J. Lie Theory 13, No. 2, 573-578 (2003).

Let $\partial = \frac{d}{dx}$, $F[x^{\pm}, e^{\pm x}] = F[x, x^{-1}, e^x, e^{-x}]$, and let $F[a_1, \dots, a_n]$ be a subalgebra of $F[x^{\pm x}, e^{\pm x}]$ generated by $a_1, \dots, a_n$. If $F[a_1, \dots, a_n]$ is ∂-stable we put $W[a_1, \dots, a_n] = \{f\partial \mid f \in F[a_1, \dots, a_n]\}$. Then $W[a_1, \dots, a_n]$ is a Lie algebra over F with the usual product

$$[f\partial, g\partial] = f\partial \circ g\partial - g\partial \circ f\partial = (f(\partial g) - (\partial f)g)\partial \ \ (f, g \in F[a_1, \dots, a_n]).$$

In this paper, the authors show that the automorphism group of $W[x, e^x]$ is isomorphic to $F^* \times F$, while the automorphism group of $F[x, e^{\pm x}]$ is isomorphic to $\mathbb{Z}/2\mathbb{Z} \ltimes (F^* \times F)$.

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MSC:

17B65	Infinite-dimensional Lie (super)algebras	Cited in **5** Documents
17B40	Automorphisms, derivations, other operators for Lie algebras and super algebras	

Keywords:

automorphism; generalized Witt type Lie algebra

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