

**Burde, Dietrich**

**Degenerations of nilpotent Lie algebras.** (English) Zbl 1063.17009

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Summary: In this paper we study degenerations of nilpotent Lie algebras. If  $\lambda, \mu$  are two points in the variety of nilpotent Lie algebras, then  $\lambda$  is said to degenerate to  $\mu$ ,  $\lambda \rightarrow_{\text{deg}} \mu$ , if  $\mu$  lies in the Zariski closure of the orbit of  $\lambda$ . It is known that all degenerations of nilpotent Lie algebras of dimension  $n < 7$  can be realized via a one-parameter subgroup. We construct degenerations between characteristically nilpotent filiform Lie algebras. As an application it follows that for any dimension  $n \geq 7$  there exist examples of degenerations of nilpotent Lie algebras which cannot be realized via a one-parameter subgroup.

**MSC:**

17B30 Solvable, nilpotent (super)algebras

Cited in **19** Documents

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