# On Lie algebras associated with representation-finite algebras

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## Abstract

Let $\Lambda$ be a representation-finite $\mathbb{C}$-algebra which has Hall polynomials, with the universal cover $\widetilde{\Lambda}$ which is a locally bounded directed $\mathbb{C}$-algebra. In this paper we prove that the $\mathbb{Z}$-Lie algebra $L(\Lambda)$ associated with $\Lambda$ which is defined by Riedtmann in [Rit] and the $\mathbb{Z}$-Lie algebra $K(\Lambda)$ associated with $\Lambda$ which is defined by Ringel in [Rin] are isomorphic. As an application we show that if $\Lambda$ is a representation-finite (generalized) cluster-tilted algebra or representation-finite trivial extension algebra, then $K(\Lambda) \cong L(\Lambda)$.

## References

[Rit] C.H. Riedtmann, *Lie algebras generated by indecomposables,* J. Algebra 170 (1994) 526-546.
[Rin] C.M. Ringel, *Hall algebras, in: Banach Center Publications,* vol. 26, PWN, Warsaw, 1990, pp. 433447.