Kihara, Hiroshi  
Matric generators of coalgebras and bialgebras. (English)  
J. Algebra Appl. 18, No. 8, Article ID 1950144, 6 p. (2019).

M. Takeuchi asserted that if a bialgebra $H$ over a field $k$ is finitely generated as a $k$-algebra, then $H$ is a matric bialgebra in [Isr. J. Math. 72, No. 1–2, 232–251 (1990; Zbl 0723.17013)].

The author introduces the notion of a matric coalgebra over a commutative ring $k$, and shows that if $C$ is faithfully projective as a $k$-module, then $C$ is a matric coalgebra. Using this, the author also shows that if a bialgebra $H$ over a semihereditary ring $k$ is projective as a $k$-module, then any finite subset of $H$ is contained in some matric subbialgebra. This result is a generalization of Takeuchi’s assertion and can be regarded as a local finiteness theorem on bialgebras.

Reviewer: Shuangjian Guo (Guiyang)

MSC:

16T15 Coalgebras and comodules; corings  
16T10 Bialgebras  
16E60 Semihereditary and hereditary rings, free ideal rings, Sylvester rings, etc.

Keywords:

matric coalgebra; matric bialgebra; semihereditary ring; local finiteness

Full Text: DOI

References:


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