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Coverings of pointed coalgebras and pseudocompact algebras

Every coalgebra over an algebraically closed field is Morita-Takeuchi equivalent to a pointed coalgebra. Every pointed coalgebra can be embedded in the path coalgebra of its Gabriel quiver. We describe how topological coverings of quivers can be used to produce coverings of coalgebras. For non-Galois coverings the covering coalgebras are realized as smash coproducts over G -sets for the fundamental group G . The comodule category of the covering is then equivalent to the category of comodules graded by the G -set. The theory can be dualized to pseudocompact algebras and completed smash coproducts.