

COLLOQUIUM

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Projectivity over the
graded ring of
semi-coinvariants



Mathematics
and
Statistics

October 4, 2013

3.30 to 4.30 o'clock

Research & Innovation Centre 209

Abstract:

Let k be a field, H a Hopf k -algebra and G the group of grouplike elements of H . Let A be a right H -comodule algebra, and denote by ${}_A\mathcal{M}^H$ the category of relative left-right (A, H) -Hopf modules. Let M be an object of this category with comodule structure ρ_M . Set $\mathcal{S}(M) = \bigoplus_{x \in G} M_x$, where $M_x = \{m \in M : \rho_M(m) = m \otimes x\}$ for each $x \in G$. Then $\mathcal{S}(A)$ is a G -graded algebra called the subalgebra of semi-coinvariants of A . We give necessary and sufficient conditions for a right G -graded $\mathcal{S}(A)$ -module to be projective in the category of right G -graded $\mathcal{S}(A)$ -modules.