

On clean comodules and clean coalgebras

Nikken Prima PUSPITA (University Gadjah Mada, Indonesia)

nikkenprima@gmail.com

Throughout R is a commutative ring with multiplicative identity. We have already known the notions of cleanness on rings and modules. In this research, we applied cleanness property on modules and rings to comodule and coalgebra structure. Since every C -comodule M is a module over the dual algebra of C , we define a clean comodule based on this fact. A C -comodule M is a clean comodule when M is clean as a module over the dual algebra of C . Furthermore, a clean coalgebra defines by considering any coalgebra C as a comodule over itself. Here, we give some sufficient conditions of clean comodules and clean coalgebras.

Moreover, let P be a finitely generated (f.g) projective R -module. The tensor product $P^* \otimes_R P$ is an R -coalgebra and P, P^* can be consider as a comodule over coalgebra $P^* \otimes_R P$. Using the Morita context, this paper give sufficient conditions of clean coalgebra $P^* \otimes_R P$ and clean $P^* \otimes_R P$ -comodule P and P^* . This sufficient conditions are determined by the conditions of module P and ring R .

This is a joint work with Indah Emilia Wijayanti and Budi Surodjo.