Universidade Federal de São Carlos
Departamento de Matemática

Colóquios do DM-UFSCar

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Falará sobre

Derivations on prime and semi-prings

In ring theory additive mappings plays a crucial role. In 1957, Posner introduced several aspects of a study of derivations such as composition of derivations and centralizing derivations on prime rings. By derivation, we mean an additive mapping d on R that satisfies the condition $d(xy) = d(x)y + xd(y)$ for all $x, y \in R$. Further, Herstein, Bresar, Lee and Shui, Filippis etc...studied the commuting or centralizing derivations on some appropiate subsets of prime or semiprime rings R. Extension of derivation is a generalized derivation. Generalized derivation defined as: an additive mapping F on R is said to be a generalized derivation if there exists a derivation d on R such that $F(xy) = F(x)y + xd(y)$ for all $x, y \in R$. Hence generalized derivations covers the concept of derivations.

It is well known that the center of Utumi quotient ring U is extended centroid, denoted by C. The extended centroid C is a field. The definition and axiomatic formulation of Utumi quotient ring U can be found in [K. I. Beidar, W. S. Martindale III, and A. V. Mikhalev, Rings with generalized identities. Marcel Dekker, New York, 1996] and [C.-L. Chuang, Proc. Amer. Math. Soc., 103(3), 723–728, 1988].

[T. K. Lee, Comm. Algebra, 27(8), 4057–4073, 1999], proved that every generalized derivation (or derivation) on prime ring R can be uniquely extended to a generalized derivation (or derivation) on U.

In this talk, I will discuss my recent work which is an extension of Posner's and Filippis's result. Further, we will discuss about **skew generalized derivations** which is an extension of derivations and generalized derivations.

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