

962-13-220

Radoslav M. Dimitric* (raddimitric@netscape.net). *Slender rings*.

For a (commutative) ring R , of special interest are the R -homomorphisms $f : R^N \longrightarrow R$ of the form $f = f_{n_1}\pi_{n_1} + \dots + f_{n_k}\pi_{n_k}$, for some $n_i \in N$, and some homomorphisms $f_{n_i} : R \longrightarrow R$ (N is the set of natural numbers). What are the rings with the property that all the homomorphisms $f : R^N \longrightarrow R$ are of this form? Among other things this question is equivalent to having the natural isomorphism

$$\text{Hom}(R^N, R) \cong \oplus \text{Hom}(R, R).$$

Rings of this kind are called *slender rings*. The theory of these rings is extremely rich (my monograph on this subject will appear in 2001 in the Cambridge University Press “Tracts” series). In this talk I will give insight into a general theory, as well as give characterizations of slender rings for some special types of commutative rings, such as Boolean rings, Dedekind rings, some Noetherian rings and a number of function rings. This topic is not only interesting and useful to a ring-theoretic audience, but rather beautiful in its mathematical complexity. (Received August 29, 2000)