

1007-13-137

Lee Klingler* (klingler@fau.edu), Department of Mathematical Sciences, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431-6498, and **W. Hassler, R. Karr** and **R. Wiegand**. *Large Indecomposable Modules over Commutative Local Rings*.

We determine which commutative, local (Noetherian) rings have “large” indecomposable finitely generated modules. In earlier joint work of mine with L. Levy, we showed that indecomposable finitely generated modules over local Dedekind-like rings have torsion-free rank at most two. In current joint work with W. Hassler, R. Karr, and R. Wiegand, we show that any one-dimensional local Cohen-Macaulay ring which is not a homomorphic image of a local Dedekind-like ring has indecomposable finitely generated modules of arbitrary (and hence arbitrarily large) torsion-free rank. For non-Cohen-Macaulay rings and rings of higher dimension, multiplicity (rather than torsion-free rank) is an appropriate measure of size; we show that any local ring which is not a homomorphic image of a Dedekind-like ring has indecomposable finitely generated modules of arbitrarily large multiplicity. (Received February 16, 2005)