

1114-13-120

Katharine Shultis* (shultis@gonzaga.edu), Department of Mathematics, 502 E. Boone Ave, MSC 2615, Spokane, WA 99258. *Systems of parameters of modules and the Cohen-Macaulay property*. Preliminary report.

Let R be a commutative, Noetherian, local ring and M a finitely generated R -module. Consider the module of homomorphisms $\text{Hom}_R(R/\mathfrak{a}, M/\mathfrak{b}M)$ where $\mathfrak{b} \subseteq \mathfrak{a}$ are parameter ideals of M . When $M = R$ and R is Cohen-Macaulay, Rees showed that this module of homomorphisms is always isomorphic to R/\mathfrak{a} . Recently, K. Bahmanpour and R. Naghipour showed that if $\text{Hom}_R(R/\mathfrak{a}, R/\mathfrak{b})$ is isomorphic to R/\mathfrak{a} for *every* pair of parameter ideals $\mathfrak{b} \subseteq \mathfrak{a}$ then R is Cohen-Macaulay. I will discuss the structure of $\text{Hom}_R(R/\mathfrak{a}, M/\mathfrak{b}M)$ for general M . (Received August 18, 2015)