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Nicholas R Baeth* (baeth@ucmo.edu), WCM 213, Department of Mathematics and Computer Scienc, University of Central Missouri, Warrensburg, MO 64064, and **Silvia Saccon**. *Monoids of Modules over Rings with Infinite Representation Type*.

Given a reduced Noetherian local ring (R, \mathfrak{m}) , $\mathfrak{C}(R)$ denotes the monoid of isomorphism classes of torsion-free R -modules (together with $[0]$) with operation $[M] + [N] = [M \oplus N]$. If R is complete, then the Krull-Remak-Schmidt property holds; i.e., direct-sum decompositions of finitely generated R -modules are unique. If R is not complete, then properties of the monoid $\mathfrak{C}(R)$ measure how far R is from having the Krull-Remak-Schmidt property. We give descriptions of $\mathfrak{C}(R)$ for local ring-orders with infinite representation type. Under certain hypotheses, we show that for arbitrary positive integers s and t , there exists a torsion-free R -module which can be written as $N_1 \oplus \cdots \oplus N_s \cong L_1 \oplus \cdots \oplus L_t$ for indecomposable torsion-free R -modules N_i and L_j . (Received January 25, 2010)