

1096-13-834

Fulton L. Jackson II* (fjacks14@msudenver.edu). *A Classification Theorem for Diophantine Monoids with Special Defining Matrices.*

In the paper "*Factorization Theory and Decomposition of Modules*" N. R. Baeth and R. Wiegand describe the connections between the KRSA Decomposition Theorem and factorization results within integral domains. Their paper concludes with a series of open questions on how these results can be extended. In this presentation we propose our solution for the classification problem of Diophantine monoids.

In order to describe what monoids H can be realized as Diophantine monoids with special properties we studied the row-reduced form of the defining matrix φ_H . After completely classifying these monoids we conclude our presentation with a list of characteristics for Diophantine monoids and extend our results to indecomposable modules. (Received September 10, 2013)