On the rudimentary property of rings

Cosmin S. Roman*, Gangyong Lee and Xiaoxiang Zhang

The Ohio State University
Chungnam National University
Southeast University
E-mail: cosmin@math.osu.edu

In 2014, together with G. Lee and X. Zhang, we introduced the concept of rudimentary ring, a natural yet non-trivial generalization of that of the well-known primitive rings. A ring R is called right rudimentary if there exists a right R-module M such that M is faithful and $End_R(M)$ is a division ring. This new concept inherits some important properties from primitive rings, such as Morita invariance. Primitive rings are relatively easy to describe, by now a textbook exercise, as dense subrings in matrix rings or, in general, of endomorphism rings of vector spaces over division rings. However, due to their dependence on endomorphism rings of modules, rudimentary rings have a more complicated structure, not yet fully developed. In this talk I will provide new insights in the structure of rudimentary rings, indicate some applications, and give a number of examples that delimit these results and the included ancillary notions.

(This is a joint work with Gangyong Lee and Xiaoxiang Zhang.)

References

[1] G. Lee; C.S. Roman; X. Zhang, Modules whose endomorphism rings are division rings, Comm. Algebra, 2014 42(12), 5205–522

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