ON HOLLOW-LIFTING SEMIMODULES

Landing FALL

Cheikh Anta Diop university of Senegal

a joint work with

Moussa Sall[1] & Djiby Sow.[2]

[1] *Cheikh Anta Diop university of Senegal*
[2] *Cheikh Anta Diop university of Senegal*

Abstract

The notions of lifting and hollow lifting modules are well studied in ring and module theory. Recently, many concepts in this theory were generalized in semiring and semimodule.
In this way, a left R-semimodule M is called hollow if for all proper subsemimodule of M is small in M and it is called lifting if for all subsemimodule N of M, there exists a direct summand K of M such that $N/K \ll M/K$. If M is lifting and M/N is hollow for all $N \leq M$, then M is called hollow-lifting.
In this work we introduce the notion of hollow-lifting semimodule and theirs characterisations. In an other hand we show when the concepts of hollow, lifting and hollow-lifting semimodules are equivalent.

Keywords

Subtractive semimodule, Lifting semimodule, Hollow-lifting semimodule, Local direct summand.

References

[1] D.Keskin, *On Coclosed Submodules*, Indian J.pure appl.Math, 36(2005), 135-144.

[2] J.Clark, C.Lomp, N.Vanaja, R.Wisbauer, *Lifting modules*, frontiers in Mathematics, Birkhaeuser Basel 2006.

[3] M.Sall, M.Barry, L.Fall *On small subtractive and projective Semimodules over zero-sum semiring*, JP .Journal of Algebra, Number Theory and Application (ISSN: 0972-5555) volume 61. Numéro 2, 2023', Pages 117-134.

[4] P. Fluery, *Hollow modules and local endomorphism rings*,Pacific J. Math. 53, 379–385 (1974).

[5] N. Orhan, D. keskin, *On hollow-lifting modules*, Tawanes Journal of Mathematis, vol. 11, No 2 pp.545-568, June 2007.

[6] S.Ebrahimi Atani and F.Esmaeili Khalil Saraei, *On Coatomic Semimodules over Commutative Semirings*, Çankaya University Journal of Science and Engineering, Volume 8(2011), No.2, 189-200