

ON τ -COMPLEMENTED MODULES

SEPTIMIU CRIVEI

Abstract. For a hereditary torsion theory τ , a module A is called τ -complemented if every submodule of A is τ -dense in a direct summand. We mainly study the class of τ -complemented τ -injective modules and its connections with some other classes of modules, such as the class of τ -completely decomposable modules.

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Key words. τ -complemented module, τ -completely decomposable module, τ -injective hull.

REFERENCES

- [1] BUESO, J.L., JARA, P. and TORRECILLAS, B., *Decomposition of injective modules relative to a torsion theory*, Israel J.Math., **52** (1985), 266–272.
- [2] CRIVEI, S., *m-injective envelopes of modules*, Mathematica (Cluj), **41** (64) (1999), 149–159.
- [3] CRIVEI, S., *Injective modules relative to the Dickson torsion theory*, Vietnam J. Math., **29** (2001), 329–338.
- [4] CRIVEI, S., *On τ -completely decomposable modules*, Preprint, 2001.
- [5] DICKSON, S.E., *A torsion theory for abelian categories*, Trans. Amer. Math. Soc., **121** (1966), 223–235.
- [6] DUNG, N.V., HUYNH, D.V., SMITH, P.F. and WISBAUER, R., *Extending modules*, Pitman Research Notes in Mathematics Series, Longman Scientific & Technical, 1994.
- [7] GOLAN, J.S., *Torsion theories*, Longman Scientific and Technical, New York, 1986.
- [8] MASAIKE, K. and HORIGOME, T., *Direct sum of σ -injective modules*, Tsukuba J. Math., **4** (1980), 77–81.
- [9] MOHAMED, S. and SINGH, S., *Decomposition of σ -injective modules*, Comm. Algebra, **9** (1981), 601–611.
- [10] PAGE, S.S. and ZHOU, Y., *Direct sums of injective modules and chain conditions*, Canad. J. Math., **46** (1994), 634–647.
- [11] SHARPE, D.W. and VÁMOS, P., *Injective modules*, Cambridge Univ. Press, 1972.
- [12] SMITH, P.F., VIOLA-PRIOLI, A.M. and VIOLA-PRIOLI, J.E., *Modules complemented with respect to a torsion theory*, Comm. Algebra, **25** (1997), 1307–1326.
- [13] SMITH, P.F., VIOLA-PRIOLI, A.M. and VIOLA-PRIOLI, J.E., *On μ -complemented and singular modules*, Comm. Algebra, **25** (1997), 1327–1339.
- [14] TEPLY, M.L., *Semicocritical modules*, Universidad de Murcia, Secretariado de Publicaciones e Intercambio Científico, Murcia, 1987.
- [15] VIOLA-PRIOLI, A.M. and VIOLA-PRIOLI, J.E., *The smallest closed subcategory containing the μ -complemented modules*, Comm. Algebra, **28** (2000), 4971–4980.

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*Faculty of Mathematics
and Computer Science
“Babeş-Bolyai” University
RO-40084 Cluj-Napoca, Romania
E-mail: crivei@math.ubbcluj.ro*