

**ADDENDUM TO
“RINGS WHOSE MODULES
HAVE MAXIMAL SUBMODULES”**

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A ring R is *right max* if every nonzero right R -module has a maximal submodule. In [F1] the author stated several open problems regarding right max rings.

Let E be the minimal injective cogenerator of $\text{mod-}R$, and let $\Lambda = \text{End}(E_R)$ be its endomorphism ring.

- (1) If Λ is right max, is R ?
- (2) If R is right max, is Λ ?

Recently, Xue [X] answered (1) in the affirmative, and (2) in the negative. He also appended several typos in [F1], which we list here for the convenience of the readers of *Publicacions Matemàtiques*.

Corrections to [F1]

- (C1) p. 202, l. 6: replace “iff” by “only if”. For a perfect local ring R the unique simple module E has the stated property but does not cogenerate $\text{mod-}R$ unless R is a field.
- (C2) p. 203, footnote: “semi-Artinian” should be “Artinian”. (A 2-sided perfect ring R is semi-Artinian and Hamsher but need not be Noetherian.)
- (C3) p. 212, l. 10–11: “right and left Artinian” should be “right Artinian” for a right Morita duality, and left Artinian for a left Morita duality, since a right Artinian ring with a right Morita duality need not be left Artinian. (See [T, p. 32, Theorem 3.7 and p. 37].)
- (C4) p. 214, l. 11: “4 (1966), 373–387” ought to be “16 (1970), 60–66”.
- (C5) p. 203, **First and Second Max Theorem**: add Renault [R] to the cited references [H], [K].

Remarks. (1) As Xue [X] remarks, these corrections in no way affect the results of [F1].

(2) The Abstract [F3] listed in [F1] has since appeared as [F2] below.

References

- [F1] C. FAITH, Rings whose modules have maximal submodules, *Publ. Mat.* **39** (1995), 201–214.
- [F2] C. FAITH, Locally perfect commutative rings are those whose modules have maximal submodules, *Comm. Algebra* **23** (1995), 4885–4886.
- [R] G. RENAULT, Sur les anneaux A , tels que tout A -module A gauche non nul contient un sous-module maximal, *C. R. Acad. Sci. Paris Sér. A* **264** (1967), 622–624.
- [T] H. TACHIKAWA, “*Quasi-Frobenius Rings and Generalizations*,” *Lecture Notes in Mathematics* **351**, Springer-Verlag, Berlin, Heidelberg and New York, 1973.
- [X] W. XUE, Two questions on rings whose modules have maximal submodules, Preprint, Fujian Normal Univ., China, 1998.

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Rebut el 14 de gener de 1998