

When are Baer modules extending?

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a joint work with

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Abstract

Extending a result of Chatters and Khuri (1980) to the module theoretic setting, Rizvi and Roman showed that *a module M is \mathcal{K} -nonsingular and extending if and only if M is \mathcal{K} -cononsingular and Baer*. This result shows that the notion of an extending module is closely linked to that of a Baer module. Recall that a right R -module M is called Baer if for all $N \leq M$, $l_S(N) \leq^{\oplus} {}_S S$ where $S = \text{End}_R(M)$. Further, M_R is called \mathcal{K} -nonsingular if $\forall \varphi \in S$ such that $\text{Ker} \varphi \leq^e M$, $\varphi = 0$. M_R is called \mathcal{K} -cononsingular if for any $N \leq M$ with $\varphi N \neq 0$ $\forall \varphi \in S$, then $N \leq^e M$. While the notion of \mathcal{K} -nonsingular modules has been studied earlier, not much is known about \mathcal{K} -cononsingular modules to the best of our knowledge. In this talk we investigate \mathcal{K} -cononsingular modules and a related slightly stronger condition.