

## SOME PROPERTIES OF STAR OPERATIONS ON RING EXTENSIONS

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**ABSTRACT.** Let  $\star$  be a star operation on a ring extension  $R \subseteq S$ . A ring extension  $R \subseteq S$  is called Prüfer *star*-multiplication extension ( $P\star ME$ ) if  $(R_{[\mathfrak{m}]}, \mathfrak{m}_{[\mathfrak{m}]})$  is a Manis pair in  $S$  for every  $\star$ -maximal ideal  $\mathfrak{m}$  of  $R$  [L. Paudel and S. Tchamna, A study of linked star operations, to appear in Bull. Korean Math. Soc., Definition 3.1]. We establish some results on star operations, and we study  $P\star ME$  in pullback diagrams of type  $\square$ . We show that, for a maximal ideal  $\mathfrak{m}$  of  $R$ , the extension  $R_{[\mathfrak{m}]} \subseteq S$  is Manis if and only if  $R[X]_{[\mathfrak{m}R[X]]} \subseteq S[X]$  is a Manis extension.

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