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Closed prime ideals in algebras with semiprime multiplication algebra. (English)

Commun. Algebra 35, No. 12, 4245-4276 (2007). http://dx.doi.org/10.1080/00927870701649424 http://taylorandfrancis.metapress.com/openurl.asp?genre=journalissn=0092-7872

Let A be a non (necessary) associative algebra and let M(A) denote its multiplication algebra (M(A) is the subalgebra of End(A) generated by the identity and all left and right multiplication operators). In the complete lattice L(A) of the ideals of A, consider the closure operators  $\pi$  defined by the double annihilator  $(\pi(U) = Ann(Ann(U)))$  for any ideal U of A), and the closure operator  $\epsilon$  obtained by regarding A as a left M(A)module.

In the paper under review the authors prove that if M(A) is semiprime, except in the exceptional case that  $\epsilon(A^2) \neq A$ , the proper closed prime ideals of A are the maximal closed ideals of A, for the closure operations  $\pi$  and  $\epsilon$ . In fact, they proved that these sets agree for both closures. The same can be said in the multiplication algebra M(A) for its closure operations  $\pi$  and  $\epsilon'$ .

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- \*17 A 60 Structure theory of general nonassociative rings and algebras
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