THE KERNEL AND RANGE INCLUSIONS OF INTEGRAL DERIVATIONS IN SEMIPRIME RINGS

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Let R be a semiprime ring with extended centroid C. Suppose that δ and δ' are derivations of R with δ C-integral. We obtain a complete characterization that either the kernel of δ is contained in the kernel of δ' or the range of δ' is contained in the range of δ. Moreover, the derivation δ' is completely determined by δ and is given by a specific type.