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THE PEDERSEN IDEAL AND THE REPRESENTATION OF C*-ALGEBRAS

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ABSTRACT. Let A be a C^*-algebra, Z the center of A, and K the Pedersen ideal of A. It is proved that if ZA is dense in A, then K is equal to $(K \cap Z)A$. It is known from the Dauns-Hofmann representation theory that given a C^*-algebra A, there exists a C^*-bundle such that A is isometrically $*$-isomorphic to the ring of sections which vanish at infinity. This, together with the above characterization of the Pedersen ideal, is used to prove that if ZA is dense in A, then K is isometrically $*$-isomorphic to the ring of sections with compact support. Under the same assumption it is observed that $M(A)$, the multiplier algebra of A, is isometrically $*$-isomorphic to the ring of bounded sections and that $M(K)$, the multiplier algebra of K, is $*$-isomorphic to the ring of all sections.

1. Introduction. Let A be a C^*-algebra. If A is commutative, then $A = C_\infty(X)$, the continuous, complex-valued functions which vanish at infinity on a locally compact, Hausdorff space X. The algebra A contains the ideal $C_K(X)$, the functions with compact support. The multiplier algebra of A, $M(A)$, is equal to $C_b(X)$, the bounded, continuous functions on X and the multiplier algebra of $C_K(X)$ is equal to $C(X)$, the space of all continuous functions on X. The purpose of this note is to develop a non-commutative analogue of these relationships in terms of sections in a C^*-bundle. This will be done by use of the Pedersen ideal.

In order to develop an integration theory for arbitrary C^*-algebras, G.K. Pedersen introduced in **[11]** an ideal which is generally accepted as the non-commutative analogue of $C_K(X)$. This ideal will be referred to as the Pedersen ideal. Extensive studies of the Pedersen ideal and its multiplier algebra have been made by Lazar and Taylor **[8]**, **[9]**, Pedersen and Petersen **[13]**, Akemann, Pedersen, and Tomiyama **[1]**.

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The notation in this note is approximately that of **[3]**. The letter A will

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