

Banach Algebras 2009
A conference supported by the European Science Foundation under the
ESF-EMS-ERC COM partnership
July 14-24, 2009, Stefan Banach International Mathematical Center, Będlewo,
Poland

Robert Archbold, Department of Mathematical Sciences, University of Aberdeen, King's College, Aberdeen, AB24 3UE, Scotland, UK; (r.archbold@abdn.ac.uk)

Ideal structure in multiplier algebras of C^* -algebras

ABSTRACT. We discuss joint work with Somerset on ideal structure in the multiplier algebra $M(A)$ of a separable, non-unital C^* -algebra A . The work of previous authors has tended to focus on the cases where A is simple, primitive or prime, and further complications can occur when the centre $ZM(A)$ (which is isomorphic to $C^b(\text{Prim}(A))$ by the Dauns-Hofmann theorem) is infinite dimensional.

Closed, two-sided ideals of A (respectively $M(A)$) correspond to open subsets of the primitive ideal space $\text{Prim}(A)$ (respectively $\text{Prim}(M(A))$). This leads to the consideration of the extent to which topological properties of $\text{Prim}(A)$ carry over to $\text{Prim}(M(A))$. For example, the relation of inseparability on $\text{Prim}(M(A))$ is defined by: $P \sim Q$ if and only if P and Q cannot be separated by disjoint open sets. We give necessary and sufficient conditions on A for the relation of inseparability on $\text{Prim}(M(A))$ to be (i) an equivalence relation, (ii) an open equivalence relation. In the latter case, $M(A)$ is said to be quasi-standard. This holds, for example, when $A = C^*(G)$ for an amenable [SIN]-group G .