JOURNAL OF
FUNCTION SPACES AND APPLICATIONS
Volume 4, Number 2 (2006), 221-224

http://www.jfsa.net

A description of the Stone space of Banach lattice $C(K, E)$

Zafer Ercan

(*Communicated by Wilhelmus Luxemburg*)

2000 Mathematics Subject Classification. 46A40.

Keywords and phrases. Banach lattice, Stone space, universal completion.

Abstract. We give a topological description of the Stone space of $C(K, E)$, Banach lattices of continuous functions from a compact Hausdorff space K into a Banach lattice E.

A compact Hausdorff space S is called *Stonean* if the closure of each open subset of K is also open. If S is a Stonean space then $C^\infty(S)$, the space of all extended real valued continuous functions f on S with $f^{-1}(\mathbb{R})$ dense in S, is a universal complete Riesz space. It is well known that for each Archimedean Riesz space E there exists unique (up to homeomorphism) Stonean space S_E such that E is order dense Riesz subspace of $C^\infty(S_E)$, this is known as Maeda-Ogasawara representation, and S_E is called *the Stone space* of E and $C^\infty(S)$ is called *the universal completion* of E. Let E be an Archimedean Riesz space. The set of all (linear) operators $T : E \to E$ such that $|T(x)| \leq \lambda |x|$ for each $x \in E$ and for some $\lambda \in \mathbb{R}$ is called the *center* of E and is denoted by $Z(E)$. $Z(E)$ is an AM-space with order unit I (the identity operator on E) which is due to Wickstead [3] and so from the Kakutani representation theorem $Z(E)$ is isometrically Riesz isomorphic to