South East Asian J. of Mathematics and Mathematical Sciences
Vol. 16, No. 3 (2020), pp. 127-144

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

SOME SPECIAL SETS IN AN EXPONENTIAL VECTOR SPACE

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(**Received:** *Jun. 25, 2020* **Accepted:** *Sep. 13, 2020* **Published:** *Dec. 30, 2020)*

Abstract: In this paper, we have studied 'absorbing' and 'balanced' sets in an Exponential Vector Space (*evs* in short) over the field $\mathbb{K}$ of real or complex numbers. We have characterised a local base at the additive identity in terms of balanced and absorbing sets in a topological evs over the field $\mathbb{K}$. We have introduced the concept of 'bounded sets' in a topological evs over the field $\mathbb{K}$ and characterised them with the help of balanced sets. Finally we have introduced the concept of 'radial' evs which characterises an evs over the field $\mathbb{K}$ up to order-isomorphism. It has been shown that "the usual subspace topology is the finest topology with respect to which $[0, \infty)$ forms a topological evs over the field $\mathbb{K}$".

Keywords and Phrases: Topological exponential vector space, order-isomorphism, absorbing set, balanced set, bounded set, radial evs.

2010 Mathematics Subject Classification: 46A99, 06F99.

1. Introduction

Exponential vector space is a new algebraic structure consisting of a semigroup, a scalar multiplication and a compatible partial order which can be thought of as an