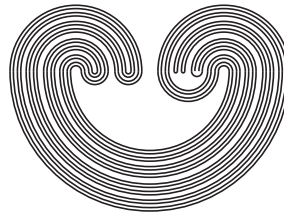


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OF CERTAIN METRICS ON LOCALLY COMPACT
METRIZABLE SPACES WITH THE COMPACT-OPEN
TOPOLOGY

by

KATSUHISA KOSHINO

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**THE TOPOLOGICAL TYPE OF SPACES CONSISTING
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TOPOLOGY**

KATSUHISA KOSHINO

ABSTRACT. For a separable locally compact but not compact metrizable space X , let $\alpha X = X \cup \{x_\infty\}$ be the one-point compactification with the point at infinity x_∞ . We denote by $EM(X)$ the space consisting of admissible metrics on X , which can be extended to an admissible metric on αX , endowed with the compact-open topology. Let $\mathfrak{c}_0 \subset (0, 1)^\mathbb{N}$ be the space of sequences converging to 0. In this paper, we shall show that if X is separable, locally connected and locally compact, and there exists a sequence $(C_i)_{i \in \mathbb{N}}$ of connected sets in X such that for all positive integers $i, j \in \mathbb{N}$ with $|i - j| \leq 1$, $C_i \cap C_j \neq \emptyset$, and for each compact set $K \subset X$, there is a positive integer $i(K) \in \mathbb{N}$ such that for any $i \geq i(K)$, $C_i \subset X \setminus K$, then $EM(X)$ is homeomorphic to \mathfrak{c}_0 .

1. INTRODUCTION

Throughout this paper, spaces are separable metrizable, maps are continuous, but functions are not necessarily continuous. Let \mathbb{R} be the space of real numbers with the usual metric, \mathbb{N} be the set of positive integers, and X be a locally compact space. We denote by $C(X^2)$ the space of continuous real-valued functions on X^2 equipped with the compact-open

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