

test

Jiangyi Huang

August 2022

Abstract

Insert abstract

1 Introduction

Definition 1. *[1] is an in-text citation.*

Theorem 1.1. *Let K be a compact set in a metric space (X, d) . Suppose $\mathcal{F} = \{U_\alpha\}_{\alpha \in A}$ is an open cover of K , then there exists a positive number λ so that for every $p \in K$ the open ball $B(p, \lambda)$ is contained in one of the open sets of \mathcal{F} .*

Proof. Since $K \subset \bigcup_{\alpha \in A} U_\alpha$, for each point p in K there is a positive number $2\varepsilon(p)$ so that the ball $B(p, 2\varepsilon(p))$ is contained in one of the open sets of \mathcal{F} . Clearly $\{B(p, 2\varepsilon(p))\}_{p \in K}$ forms an open cover of K , and so by compactness this admits a finite refinement.

□

References

- [1] *Albert Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. Annalen der Physik, 322(10):891–921, 1905.*