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### Abstract

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## 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  $\lambda$  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.*