On Continuous Surjections from Cantor Set

Félix Cabello Sánchez

Departamento de Matemáticas, Universidad de Extremadura,
Avda. Elvas, 06071-*Badajoz, Spain*
e-mail: fcabello@unex.es

(Presented by J.M.F. Castillo)

Abstract

It is a famous result of Alexandroff and Urysohn that every compact metric space is a continuous image of Cantor set Δ. In this short note we complement this result by showing that a certain "uniqueness" property holds. Namely, if (K, d) is a compact metric space and f and g are two continuous mappings from Δ onto K, then, for every $\varepsilon > 0$ there exists a homeomorphism φ of Δ such that $d(g(x), f(\varphi(x)) < \varepsilon$ for all $x\Delta$.

Key words and phrases: Homeomorphism, Cantor set.