CARISTI'S TYPE MAPPINGS ON COMPLETE PARTIAL METRIC SPACES

ÖZLEM ACAR*, ISHAK ALTUN** AND SALVADOR ROMAGUERA***

*Department of Mathematics, Faculty of Science and Arts, Kirikkale University, 71450 Yahsihan, Kirikkale, Turkey
E-mail: acarozlem@ymail.com

**Department of Mathematics, Faculty of Science and Arts, Kirikkale University, 71450 Yahsihan, Kirikkale, Turkey
E-mail: ishakaltun@yahoo.com

***Instituto Universitario de Matemática Pura y Aplicada, Universitat Politècnica de València, Camino de Vera s/n, 46022 Valencia, Spain
E-mail: sromague@mat.upv.es

Abstract. We introduce a new type of Caristi’s mapping on partial metric spaces and show that a partial metric space is complete if and only if every Caristi mapping has a fixed point. From this result we deduce a characterization of bicomplete weightable quasi-metric spaces. Several illustrative examples are given.

Key Words and Phrases: Fixed point, complete partial metric space, Caristi’s type mapping.

2010 Mathematics Subject Classification: 54H25, 54E55, 47H10.

Acknowledgments. The third author thanks the support of the Spanish Ministry of Science and Innovation, grant MTM2009-12872-C02-01.

References


Received: June 9, 2011; Accepted: January 10, 2012.