A DOMAIN-THEORETIC BISHOP-PHELPS THEOREM

ALI HASSANZADEH*, ILDAR SADEQI**-1 AND ASGHAR RANJBARI***

*Department of Mathematics, Sahand University of Technology, Tabriz, Iran
E-mail: a_hassanzadeh@sut.ac.ir
**Department of Mathematics, Sahand University of Technology, Tabriz, Iran
E-mail: esadeqi@sut.ac.ir
***Department of Pure Mathematics, University of Tabriz, Tabriz, Iran
E-mail: ranjbari@tabrizu.ac.ir

Abstract. In this paper, the notion of $c$-support points of a set in a semitopological cone is introduced. It is shown that any nonempty convex Scott closed bounded set has a $c$-support point in a cancellative $bd$-cone under certain condition. We also introduce the notion of $wd$-cone and then we prove a Bishop-Phelps type theorem for $wd$-cones, especially for normed cones, under appropriate conditions. Finally, using of the Bishop-Phelps technique, we obtain a result about the fixed points of a mapping on $s$-cones.

Key Words and Phrases: $s$-cone, Scott topology, support point, Bishop-Phelps theorem.

2010 Mathematics Subject Classification: 46N10, 47L07, 54D10.

References


1Corresponding author.


Received: January 4, 2017; Accepted: April 21, 2017.