

**OPERATIONS ON INTERVAL-VALUED COMPLEX
FUZZY GRAPHS**

R. Venkateshwara and R. Sridevi

PG and Research Department of Mathematics,
Sri S. Ramasamy Naidu Memorial College,
Sattur - 626203, Tamil Nadu, INDIA

E-mail : venkisippi@gmail.com, danushsairam@gmail.com

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Abstract: The study introduces to the combined concepts of the notions of interval-valued fuzzy graph and complex fuzzy set. The interval-valued complex fuzzy graph was introduced and it was used to define certain well-known graph theory procedures. Also, certain outcomes for these operations were also demonstrated.

Keywords and Phrases: Interval-valued complex fuzzy set, Interval-valued fuzzy graphs, Interval-valued complex fuzzy graphs.

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1. Introduction

The interval-valued fuzzy graph was introduced by Hongmei and Lianhua in 2009 [1]. Greenfield et al. (2016) described the interval-valued complex fuzzy set (IV-CFS) model and developed the interval-valued complex fuzzy logic. The present study brings out a novel concept of interval-valued complex fuzzy graphs with some fundamental operations.

Throughout this paper the vertices take the values $\mu_S^-, \mu_S^+ \in [0, 1]$ and edges take the values $\mu_T^-, \mu_T^+ \in [0, 1]$, corresponding to these values $\alpha_S^-, \alpha_S^+, \beta_S^-, \beta_S^+ \in [0, 1]$.