

## TRIANGULAR NEUTROSOPHIC GRACEFUL LABELING OF SOME GRAPHS

**G. Vetrivel and M. Mullai\***

Department of Mathematics,  
Alagappa University,  
Karaikudi, Tamil Nadu, INDIA

E-mail : menakagovindan@gmail.com

\*INTI International University, Nilai Campus, MALAYSIA

E-mail : mullaim@alagappauniversity.ac.in

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**Abstract:** In this article, triangular neutrosophic number (TrNN) is applied with the neutrosophic graceful labeling graph and as a result, the triangular neutrosophic graceful labeling (TrNGL) graphs are obtained. Also, operations like union and join are tested with TrNGL path graphs. In addition, some applications and its related algorithm is stated to enrich this new labeling concept.

**Keywords and Phrases:** Graceful labeling, Triangular neutrosophic number, Neutrosophic labeling graph, Triangular neutrosophic graceful labeling.

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### 1. Introduction

Graph theory acts as an effective phenomena to visualize an idea in a graphical manner using vertices and edges. Though there are many crisp graph models, fuzzy graph approach came into existence to overcome the issues raised during application based on approximation and certainty of output values. Kaufmann [17] relied on Zadeh's [29] fuzzy set theory to formulate the components that form fuzzy graphs. Rosenfeld [22] brought new graph models which is used to carry through some applications using its fuzzified structural components. Later, some