

**The revised method of ranking generalized trapezoidal fuzzy number using orthocenter of centroids**

Shamsuddeen Habibu<sup>1</sup>, Umar Mallam Abdulkarim<sup>2</sup>, Adam Suleiman Datti<sup>3</sup>

<sup>1</sup> *Department of Mathematics, Federal College of Education (Technical), Gusau, Nigeria*  
*Shamsuddeenhabeeb@gmail.com*

<sup>2</sup> *Department of Mathematics, Nasarawa State University, Keffi, Nigeria*  
*abdulmallam@yahoo.com*

<sup>3</sup> *Demonstration School Ahmadu Bello University Zaria, Nigeria*  
*dattisuleiman@gmail.com*

**Abstract:** In this paper, a new computing approach of ranking fuzzy numbers using orthocenter of centroids to its distance from original point is proposed. The proposed method can ranks all types of fuzzy numbers including Crisp numbers with different membership functions. We apply the proposed ranking method to develop a new method to deal with fuzzy risk analysis problems as well as similarity measure both normal and non-normal generalized trapezoidal and triangular numbers. Several methods of ranking fuzzy numbers exist in the literature but the proposed method seems to be more simple and flexible than the existing approaches.

**Keywords:** Fuzzy numbers, centroids, orthocenter, trapezoidal, triangular, crisps numbers