South East Asian J. of Math. & Math. Sci. **ISSN : 0972-7752**
Vol.14, No.2 (2018), pp. 21 - 26

Comparison of Type 2 Fuzzy Numbers with Normal and Crashing Activity in Construction Project

A. Rajkumar and D. Helen*
Department of Mathematics,
Hindustan Institute of Technology and Science, Chennai - 603103
*Department of Mathematics,
Hindustan Institute of Technology and Science, Chennai - 603103
E-mail : arajkumar@hindustanuniv.ac.in, helen.br@outlook.com

Abstract : Type 2 fuzzy sets embellish the power to act of the system for dealing with uncertainties. When activities are crashed, it is accessible that more resources are to be spent. In many aspect, we may be curious in finding the lowest setup project finishing time. So crashing network applied in Construction project by utilizing Type 2 Triskaidecagonal Fuzzy number.

Keywords and phrases : Time cost trade off, Normal, Crashing network

2000 A.M.S. subject classification : 94D, 90 April 2013.

1 Introduction, Notations and Definitions :

Type 1 fuzzy set does not apprehend uncertainty in its exhibition when it arises from vagueness by reason of their membership functions is totally crisp. Type 2 fuzzy sets are useful in these circumstances. Type 2 fuzzy set itself is fuzzy which characterizes type 2 fuzzy logic. In any project network, the initial stage is to find out the critical path with normal activity timings. Then the accomplishment of various stage of being active can be crash. Normal time is the time taken to execute an activity under normal circumstances. Crash time is the minimum duration of an action beyond which it is not possible to make less it anymore based on the algorthim [4]. This paper includes with definition, algorthim and illustration calculated with crashing method.

Definition :

Type-2 Trapezoidal Fuzzy Number : Let $a = (a_1 , a_2, a_3, a_4)$ be a trapezoidal fuzzy number. A normal type-2 trapezoidal fuzzy number $\tilde{A} = \{ (x, \mu_A^L(x), \mu_A^M(x), \mu_A^N(x), \mu_A^U(x))\}$, $x \varepsilon R$ and $\mu_A^L(x) \le \mu_A^M(x) \le \mu_A^N(x) \le \mu_A^U(x)$, for all $x \varepsilon R$.Denote $\tilde{A} = (A^L , A^M, A^N, A^U)$, where $\tilde{A} = ((a_1^L, a_2^L, a_3^L, a_4^L),(a_1^M, a_2^M, a_3^M, a_4^M),(a_1^N, a_2^N, a_3^N, a_4^N)\ (a_1^U, a_2^U, a_3^U, a_4^U))$.