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**mahdi taheri\*** ([taheri@iau-malayer.ac.ir](mailto:taheri@iau-malayer.ac.ir)), Department of mathematics, Islamic Azad University, Malayer branch, 65718/117 Malayer, Iran. *Approximate arithmetic operations on the fuzzy complex numbers using monotonic interpolation.*

We suggest the use of piecewise monotonic interpolations to approximate and represent a fuzzy complex number (or interval) and to derive a procedure to control the absolute error associated to the arithmetic operations ( $+$ ,  $-$ ,  $\bullet$ ,  $:$ ) between fuzzy complex numbers, in order to reduce the distance between the true result of the operation and its approximation. The monotonic functions are then used to define a parametric representation of a large class of fuzzy complex numbers having general shapes of the membership function and a simple and accurate procedure is introduced for the fuzzy arithmetic. Several computational experiments are given to show the good performance of the proposed procedure. (Received October 16, 2011)