Iq-Hermite-Hadamard inclusions for the interval-valued functions of two variables

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Abstract

In this work, we introduce the concept of double quantum integrals for the interval-valued functions of two variables. We offer several new inclusions of the Hermite-Hadamard type for co-ordinated convex interval-valued functions using the newly defined integrals. Moreover, we prove trapezoidal type inequalities for interval-valued functions of two variables using the ideas of the Pompeiu–Hausdorff distance between the intervals. It is also revealed that the results offered in this work are the generalization of several existing results.

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