



GENERALIZED HUKUHARA MICHEL-PENOT DIRECTIONAL DERIVATIVE OF INTERVAL-VALUED FUNCTIONS AND ITS APPLICATION IN OPTIMIZATION

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Abstract. In this paper, we study of the gH -Michel-Penot directional derivative for interval-valued functions (IVFs). To find the properties of gH -Michel-Penot directional derivative, some results of gH -directional derivative are studied. It is proven that the gH -Michel-Penot and gH -directional derivative are sublinear. It is observed that for a convex IVF, gH -Michel-Penot directional derivative always exist. The concept of mean value theorem is explained for the gH -Lipschitz IVF. Further, it is shown that the proposed derivative is useful to characterize the efficient solutions of interval optimization problems(IOPs). The entire study is supported by suitable examples.

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