

The Demyanov metric for convex, bounded sets

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Abstract

The Hausdorff metric in the family of closed sets in any metric space is frequently used, well known and suitable in many situations when the distance of sets should be considered. In some cases, however it is not fine enough to measure the distance between sets. In the family of convex and compact sets the so-called Demyanov metric is also used.

We present that a slightly different formula for the Demyanov metric allows us to extend the scope of its validity to convex, bounded but not necessarily closed sets. This metric is in fact that of uniform convergence in the set of mappings whose arguments are orthonormal systems of vectors in \mathbb{R}^d and values are convex sets orthogonal to these vectors.

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