

Least Deviation Decomposition with Respect to a Pair of Convex Sets

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Abstract: Let K_1 and K_2 be two nonempty closed convex sets in some normed space $(H, \|\cdot\|)$. This paper is concerned with the question of finding a "good" decomposition, with respect to K_1 and K_2 , of a given element of the Minkowski sum $K_1 + K_2$. We introduce and discuss the concept of least deviation decomposition. This concept is an extension of the Moreau orthogonal decomposition with respect to a pair of mutually polar cones. Techniques of convex analysis are applied to obtain some sensitivity and duality results related to the decomposition problem.

Keywords: Least deviation decomposition, convex analysis, Moreau orthogonal decomposition

Classification (MSC2000): 41A65, 52A41

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