1116-49-2702   **Luciano Stefanini** (`lucste@uniurb.it`), University of Urbino "Carlo Bo", Via A. Saffi 42, 61029 Urbino, PU, Italy, and **Barnabas Bede*** (`bbede@digipen.edu`), Department of Mathematics, DigiPen Institute of Technology, Redmond, WA 98052. *A new difference for compact convex sets.*

The concept of difference of two compact convex subsets in $\mathbb{R}^n$ plays a central role in optimization theory and in particular in quasidifferential calculus. There are various difference concepts defined by various authors, as e.g., Pontryagin, Demyanov, Rubinov, etc. We define a new difference in the space of compact convex subsets of $\mathbb{R}^n$, based on a generalization of the Hukuhara difference for intervals. Based on the support function and the dual support function we construct a family of support intervals of a given compact convex set. We consider the family of intervals obtained as generalized Hukuhara differences of the support intervals of the two sets, and we construct a minimal, compact convex set that contains this family of intervals. This construction leads to a novel difference concept between compact convex sets. We study this new difference in comparison with various other similar concepts as e.g., Pontryagin difference and Demyanov difference. (Received September 22, 2015)

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