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## Shadow projections of log-concave functions and duality relation

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Recently, it has been proven by Milman, Segal and Slomka that the only operation, up to obvious linear modifications, that interchanges linear sections with projections is the well-known duality mapping on the class of closed convex sets in  $\mathbb{R}^n$  containing the origin. In this talk, we extend this result to the class of geometric log-concave functions (attaining 1 at the origin). As the notions of polarity and the support function were uniquely extended to this class by Artstein–Avidan and Milman, a natural notion of shadow projection of log-concave functions arises. This notion is justified by our result. As a consequence of our main result, we prove that, on the class of lower semi-continuous non-negative convex functions attaining 0 at the origin, the polarity operation is the only operation interchanging addition with geometric inf-convolution and the support function is the only operation interchanging addition with inf-convolution. The latter was proven for the class of convex functions by Artstein–Avidan and Milman.

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