A REFINEMENT OF THE JESSEN–MERCER INEQUALITY
AND A GENERALIZATION ON CONVEX HULLS IN $\mathbb{R}^k$

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Abstract. A refinement of the Jessen-Mercer inequality is obtained and shown to be an improvement of the upper bound for the Jessen’s difference given in [12]. Also a generalization of the Jessen-Mercer inequality for convex functions on convex hulls in $\mathbb{R}^k$ is given and demonstrated to be an improvement of the inequalities obtained in [3]. An elegant method of producing $n$-exponentially convex and exponentially convex functions is applied using the Jessen-Mercer differences. Lagrange and Cauchy mean value type theorems are proved and shown to be useful in studying Stolarsky type means defined by using the Jessen-Mercer differences.


Keywords and phrases: Jessen-Mercer inequality, convex functions, convex hulls, $n$-exponential convexity, Stolarsky type means.

REFERENCES