GENERALIZED FRACTIONAL INTEGRAL INEQUALITIES VIA CONVEXITY

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ABSTRACT

Convexity is considered as one of the principal classes of different aspects of mathematics such as geometry and functional analysis. Applications of convex functions are found in various scientific fields, including mathematics and engineering. The well-known results, identified as integral inequalities, are formulated using the convexity. The study of these new inequalities - which link the classical inequalities with fractional inequalities - has been considered to be an active area of interest by many scholars. Thus, in this article, we present the generalized fractional inequalities through fractional operators involving generalized convexity. Using our reported results, we demonstrate their applications to special means.

***K*eywords** Convex functions · Fractional integrals · Integral inequality

References

[1] Dragomir, S. S., & Pearce, C. (2003). Selected topics on Hermite-Hadamard inequalities and applications. Science direct working paper, (S1574-0358), 04.

[2] Sarikaya, M. Z., Set, E., Yaldiz, H., & Başak, N. (2013). Hermite–Hadamard's inequalities for fractional integrals and related fractional inequalities. Mathematical and Computer Modelling, 57(9-10), 2403-2407.

[3] Chen, H., & Katugampola, U. N. (2017). Hermite–Hadamard and Hermite–Hadamard–Fejér type inequalities for generalized fractional integrals. Journal of mathematical analysis and applications, 446(2), 1274-1291.

[4] Alomari, M. W., Darus, M., & Kirmaci, U. S. (2011). Some inequalities of Hermite-Hadamard type for s-convex functions. Acta Mathematica Scientia, 31(4), 1643-1652.