

**New generalized the Hermite-Hadamard inequality and related integral inequalities
involving Katugampola type fractional integrals**

ABSTRACT

In this paper, a new identity for the generalized fractional integral is defined. Using this identity we studied a new integral inequality for functions whose first derivatives in absolute value are convex. The new generalized Hermite-Hadamard inequality for generalized convex function on fractal sets involving Katugampola type fractional integral is established. This fractional integral generalizes Riemann-Liouville and Hadamard's integral, which possess a symmetric property. We derive trapezoid and mid-point type inequalities connected to this generalized Hermite-Hadamard inequality.

Keyword: Convex function; Generalized convex function; Hermite–Hadamard inequality; Katugampola fractional integral