

Stolarsky type means related to generalizations of Steffensen's and Gauss' inequality

Talk

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(joint work with Josip Pečarić)

The well-known Steffensen inequality reads:

Suppose that f is decreasing and g is integrable on $[a, b]$ with $0 \leq g \leq 1$ and $\lambda = \int_a^b g(t)dt$. Then we have

$$\int_{b-\lambda}^b f(t)dt \leq \int_a^b f(t)g(t)dt \leq \int_a^{a+\lambda} f(t)dt.$$

The inequalities are reversed for f increasing.

In this talk functionals defined as the difference between the left-hand and the right-hand side of generalizations of Steffensen's and Gauss' inequality are studied. n -exponential and exponential, as well as logarithmic convexity of this functionals is proven. Furthermore, using this functionals, Stolarsky type means for several families of functions are generated and their monotonicity property is proven.

MSC2010: 26D15, 26D10.

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Section: Real and Complex Analysis.