POPOVICIU TYPE INEQUALITIES VIA GREEN FUNCTION
AND GENERALIZED MONTGOMERY IDENTITY

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Abstract. We obtained useful identities via generalized Montgomery identity, by which the inequality of Popoviciu for convex functions is generalized for higher order convex functions. We investigate the bounds for the identities related to the generalization of the Popoviciu inequality using inequalities for the Čebyšev functional. Some results relating to the Grüss and Ostrowski type inequalities are constructed. Further, we also construct new families of exponentially convex functions and Cauchy-type means by looking at linear functionals associated with the obtained inequalities.

Keywords and phrases: Convex function, divided difference, generalized Montgomery identity, Čebyšev functional, Grüss inequality, Ostrowski inequality, exponential convexity.

REFERENCES