

GENERALIZED ČEBYŠEV AND KY FAN IDENTITIES AND INEQUALITIES

ASIF R. KHAN, JOSIP PEČARIĆ AND MARJAN PRALJAK

Abstract. We give generalization of Čebyšev and Ky Fan integral identities and inequalities for functions of two variables by using higher order derivatives. Generalized discrete Čebyšev identity and inequality is also discussed.

Mathematics subject classification (2010): 26A51, 26D15, 26D99.

Keywords and phrases: Čebyšev identities, Ky Fan identities, convex functions.

REFERENCES

- [1] A. M. OSTROWSKI, *On the Integral Inequality*, *Aequationes Math.* **4** (1970), 358–373.
- [2] J. PEČARIĆ, *On the Ostrowski's Generalization of Čebyšev's Inequality*, *J. Math. Anal. Appl.* **102** (1984) 479–487.
- [3] J. PEČARIĆ, *Some Further Remarks on the Ostrowski's Generalization of Čebyšev's Inequality*, *J. Math. Anal. Appl.* **123** (1987) 18–33.
- [4] A. R. KHAN, J. PEČARIĆ AND S. VAROŠANEC, *Popoviciu Type Characterization of Positivity of Sums and Integrals for Convex Functions of Higher Order*, *J. Math. Inequal.* **7** (2) (2013) 195–212.
- [5] K. FAN, *Problem 4471*, *Amer. Math. Monthly* **60** (1953), 195–197.
- [6] J. ŠREMR, *Absolutely Continuous Functions of Two Variables in the Sense of Carathéodory*, *Electron. J. Differential Equations*, **2010** (154) (2010), 1–11.
- [7] J. PEČARIĆ, F. PROSCHAN AND Y. L. TONG, *Convex functions, partial orderings, and statistical applications*, Mathematics in science and engineering, vol. 187, Academic Press, 1992.