ON AN INEQUALITY FOR 3–CONVEX FUNCTIONS AND RELATED RESULTS

SADIA KHALID, JOSIP PEČARIĆ AND IVAN PERIĆ*

Abstract. Majorization type theorems (such as the Karamata inequality, the Fuchs inequality) for higher convex functions are rare and the criteria given in these theorems are difficult to check (see [10, Chapter 9.]). On the other side, the Brady theorem (see [3]) gives rather simple and the straightforward criterion for such type of results. We apply Brady’s theorems on inequalities originated from 3–exponential convexity of certain function and, as a by–product, we obtain improvements of AG–inequality and an interesting mean. As an equivalent version of Brady’s theorem, the mean value theorems, which are usually used in the definition of Stolarsky means, are also proved.


Keywords and phrases: 3-convex function, majorization for higher convexities, Brady’s characterization, Stolarsky type means, N–exponential convexity, AG-inequality, AH-inequality.

REFERENCES