

SOME NESBITT TYPE INEQUALITIES WITH APPLICATIONS FOR THE ZETA FUNCTIONS

QINGBO WANG

Abstract. In this paper, we show some new generalizations of Nesbitt's inequality. As applications of the generalizations, we obtain the minimum value related to the Riemann zeta function and the Hurwitz zeta function.

Mathematics subject classification (2010): 26D15, 11M06, 11M35.

Keywords and phrases: Nesbitt's inequality, Jensen's inequality, the Riemann zeta function, the Hurwitz zeta function.

REFERENCES

- [1] H. BATEMAN AND A. ERDELYI, *Higher Transcendental Functions*, Vol. 1, McGraw-Hill, New York, 1953.
- [2] M. BENCZE AND O. T. POP, *Generalizations and refinements for Nesbitt's inequality*, J. Math. Inequal. 5, 1 (2011), 13–20.
- [3] A. M. NESBITT, *Problem 15114*, Educational Times, 3 (1903), 37–38.
- [4] S. WU AND O. FURDUI, *A note on a conjectured Nesbitt type inequality*, Taiwanese Journal of Mathematics, Vol. 15, No. 2, pp. 449–456, April 2011.