Journal of Mathematical Inequalities
Volume 10, Number 2 (2016), 357–372
doi:10.7153/jmi-10-28

ON GENERALIZATIONS OF A TRIGONOMETRIC INEQUALITY

WENTAO CHENG, LINGJU CHEN AND XIAOMING ZENG

Abstract. This paper generalizes a trigonometric inequality to sine integral and double trigonometric series satisfying MVBVF($\mathbb{R}_+$) condition and MVBVDS condition.

Mathematics subject classification (2010): 42A05.
Keywords and phrases: Trigonometric inequality, MVBVF($\mathbb{R}_+$), MVBVDS.

REFERENCES

[1] T. W. CHAUNDRY AND A. E. JOLLIFFE, *The uniform convergence of a certain class of trigonometric series*, Proc. London Math. Soc. **15**, (1916), 214–216.
[2] L. FENG AND S. P. ZHOU, *Trigonometric inequalities in the MVBV condition*, Math. Ineq. Appl., on line: MIA-18-36.
[3] P. KÓRUS AND F. MÓRICZ, *On the uniform convergence of double sine series*, Studia Math., **193**, (2009), 79–97.
[4] R. J. LE AND S. P. ZHOU, *A generalization of an important trigonometric inequality*, J. Anal. Appl., **3**, (2005), 163–168.
[5] L. LEINDLER, *On the uniform convergence and boundness of a certain class of sine series*, Anal. Math., **27**, (2001), 279–285.
[6] F. MÓRICZ, *On the uniform convergence of sine integrals*, J. Math. Anal. Appl., **354**, (2009), 213–219.
[7] S. A. TELYAKOVSKII, *On partial sums of Fourier series of functions of functions of bounded variation*, Proc. Stekolv. Inst. Math., **219**, (1997), 372–381.
[8] M. Z. WANG AND Y. ZHAO *Generalizations of some classical results under MVBV condition*, Math. Ineq. Appl., **12**, (2009), 433–440.
[9] I. E. ZHAK AND A. A. SHNEĬDER, *Conditions for uniform convergence of double sine series*, Izv. Vyssh. Uchebn. Zaved. Mat., **4** (53), (1966), 44–52 (in Russian).
[10] Y. ZHAO, *Two trigonometric integral inequalities*, J. Math. Appl., to appear.
[11] S. P. ZHOU, *Monotonicity Condition of Trigonometric Series: Development and Application*, Science Press, Beijing, 2012, in Chinese.
[12] S. P. ZHOU, P. ZHOU AND D. S. YU, *Ultimate generalization to monotonicity for uniform convergence of trigonometric series*, Science China Math., **53**, (2010), 1853–1862.

Paper JMI-10-28