

MORE ON L^p -INTEGRABILITY

YI ZHAO AND SONGPING ZHOU

Abstract. In this paper, we give a further generalization to L^p -integrability of trigonometric series connecting with derivatives of the sum-functions.

Mathematics subject classification (2010): 42A25, 42A50.

Keywords and phrases: Integrability, mean value bounded variation, monotonicity.

REFERENCES

- [1] R. A. ASKEY AND S. WAINGER, *Integrability theorems for Fourier series*, Duke Math. J., **33** (1966), 223–228.
- [2] JR. P. R. BOAS, *Integrability Theorems for Trigonometric Transforms*, Springer, Berlin-Heidelberg, 1967.
- [3] R. J. LE AND S. P. ZHOU, *A remark on “two-sided” monotonicity condition: an application to L^p convergence*, Acta Math. Hungar. **113** (2006), 159–169.
- [4] L. LEINDLER, *Generalization of inequalities of Hardy and Littlewood*, Acta Sci. Math. (Szeged) **31** (1970), 279–285.
- [5] L. LEINDLER, *Relations among Fourier series and sum-functions*, Acta Math. Hungar. **104** (2004), 171–183.
- [6] D. S. YU, P. ZHOU AND S. P. ZHOU, *On L^p integrability and convergence of trigonometric series*, Studia Math. **182** (2007), 215–226.
- [7] S. P. ZHOU, *Monotonicity Condition of Trigonometric Series: Development and Application*, Science Press, Beijing, 2012, in Chinese.
- [8] 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/available: arXiv: math.CA/0611805 v1 27 Nov 2006.
- [9] A. ZYGMUND, *Trigonometric Series*, Cambridge University Press, Cambridge, 1977.