

Tateoka, J.

The modulus of continuity and the best approximation over the dyadic group. (English)

Zbl 0774.41026

Acta Math. Hung. 59, No. 1-2, 115-120 (1992).

The connection between the modulus of continuity and the best approximation of functions by Walsh polynomials was studied by *C. Watari* [Tohoku Math. J., II. Ser. 15, 1-5 (1963; Zbl 0111.265)] for L^p space, $1 \leq p < \infty$. A similar result for $0 < p < 1$ was obtained by *E. A. Storozenko*, *V. G. Krotov* and *P. Oswald* [Math. Sb., n. Ser. 98(140), 395-415 (1975; Zbl 0314.41004)]. On the other hand, direct and converse theorems for the Hardy space H^p , $0 < p < \infty$, over the n -dimensional torus were proved by *L. Colzani* [Ann. Math. Pure Appl., IV. Ser. 137, 207-215 (1984; Zbl 0558.41017)]. In this paper these results for the H^p space, $0 < p \leq 1$ and VMO space over the dyadic group are proved.

Reviewer: D.Zarnadze (Tbilisi)

MSC:

[41A50](#) Best approximation, Chebyshev systems

[41A17](#) Inequalities in approximation (Bernstein, Jackson, Nikol'skiĭ-type inequalities)

[41A27](#) Inverse theorems in approximation theory

[46A16](#) Not locally convex spaces (metrizable topological linear spaces, locally bounded spaces, quasi-Banach spaces, etc.)

Cited in 2 Documents

Full Text: [DOI](#)

References:

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- [2] A. I. Rubinshtein, Moduli of continuity of functions, defined on a zero-dimensional group, Math. Note, 23 (1978), 205–211.
- [3] È. A. Storozenko, V. G. Krotov and P. Oswald, Direct and converse theorems of Jackson type in L^p spaces, $0 < p < 1$, Math. USSR Sbornik, 27 (1975), 355–374. · [Zbl 0372.41004](#) · [doi:10.1070/SM1975v027n03ABEH002519](#)
- [4] M. H. Taibleson, Fourier Analysis on Local Fields (Princeton, 1975). · [Zbl 0319.42011](#)
- [5] C. Watari, Best approximation by Walsh polynomials, Tôhoku Math. J., 15 (1963), 1–5. · [Zbl 0111.26502](#) · [doi:10.2748/tmj/1178243865](#)

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