SHARP INEQUALITIES FOR HILBERT TRANSFORM IN A VECTOR–VALUED SETTING

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Abstract. The paper is devoted to the study of the periodic Hilbert transform $H$ in the vector valued setting. Precisely, for any positive integer $N$ we determine the norm of $H$ as an operator from $L^\infty(T;\ell_N^\infty)$ to $L^p(T;\ell_N^\infty)$, $1 \leq p < \infty$, and from $L^p(T;\ell_1^\infty)$ to $L^1(T;\ell_1^\infty)$, for $1 < p \leq \infty$. The proof rests on the existence of a certain family of special harmonic functions.

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REFERENCES


