Potapov, M. K.; Fernández Muniz, J. L.
Characteristic structure and constructive characteristic of functions analytic in a strip.
(Spanish. English summary) Zbl 0564.42001

Let $B^p_{\delta}H^\psi_{\infty}$ be the class of analytic functions on \{\(|y| < \delta, -\infty < x < \infty\)\}, 2\pi-periodic with respect to x, real for $y = 0$ and whose boundary function $\phi(x) = \lim_{y \to \pm \delta} \text{Re}f(x + iy)$ is in $L_p$ and its m-th module of continuity $w_m(\phi, \delta)$ satisfies $w_m(\phi, \delta) \leq C \psi(\delta)$, where $\psi$ is a non-negative continuous function with certain strong restrictions related to m. The author proves, in particular, that $E_n(f)_p \leq C'/e^{n\delta} \psi(1/n)$, where $E_n(\cdot)_p$ denotes the best approximation in $L_p$ by means of 2\pi-periodic trigonometric polynomials of degree $\leq n - 1$ and $C'$ is independent of n. This and other results shown, extend previous ones of M. K. Potapov for the special case when $\psi(\delta) = \delta^r$.

Reviewer: L.Lagomasino

MSC:
42A10 Trigonometric approximation
41A17 Inequalities in approximation (Bernstein, Jackson, Nikol’skii-type inequalities)
41A50 Best approximation, Chebyshev systems

Keywords:
characteristic structure; best approximation by trigonometric polynomials; analytic functions in a strip