Huotari, Robert; Sahab, Salem
Simultaneous monotone approximation in low-order mean. (English)

Let \( f, g \in L_\infty[0,1] \) and have discontinuities of the first kind only. Using the measure of simultaneous \( h_p \)
approximations, \( \max \{ \| f - h \|_p, \| g - h \|_p \} \), it is shown that the best simultaneous approximations, \( h_p \) to
\( f \) and \( g \) by nondecreasing functions converge uniformly as \( p \to 1 \). Indeed the work here is a continuation
of the study begun in an earlier joint work of these authors [Can. Math. Bull. 34, No. 3, 343-350 (1991;
Zbl 0724.41017)] where the case \( p \to \infty \) has been discussed.

Reviewer: G.D. Dikshit (Auckland)

MSC:
41A28 Simultaneous approximation
40A05 Convergence and divergence of series and sequences
40A30 Convergence and divergence of series and sequences of functions
41A30 Approximation by other special function classes

Keywords:
simultaneous monotone; \( L_p \)-approximation; discrete simultaneous approximations; Chebyshev centre; best
simultaneous approximations

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References:

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