# COMPACT OPERATORS ON SPACES OF STRONGLY BOUNDED AND SUMMABLE SEQUENCES

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ABSTRACT. The sets $w_0^p$, $w^p$, and $w_\infty^p$ of sequences that are strongly summable to zero, strongly summable, and strongly bounded, with index $p$ for $1 \leq p < \infty$, by the Cesàro method of order 1 were first introduced and studied by Maddox who characterised the class $(w^p, c)$ of all matrix transformations from $w^p$ into the space $c$ of all convergent sequences. We present the complete list of characterisations of the classes of matrix transformations from each one of Maddox's spaces into the sets $c_0$ of null sequences, $c$, and $\ell_\infty$ of bounded sequences. We also give the representation of the general linear operator from $w^p$ into $c$. Finally we compute or estimate the Hausdorff measure of noncompactness of linear operators from $w_0^p$, $w^p$ and $w_\infty^p$ into $c_0$, $c$ and $\ell_\infty$, and apply our results to characterise the respective classes of compact operators.

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