MONOTONE SUBSTOCHASTIC OPERATORS AND A NEW CALDERÓN COUPLE

KAROL LEŚNIK

A couple of Banach spaces is called a Calderón couple if each interpolation space for this couple may be generated by the K-method of interpolation. Firstly we shall give a short survey on the history of Calderón couples. Then a monotone version of the Hardy-Littlewood-Pólya theorem on submajorization will be presented. Further, this result is applied to show that $(\widetilde{L^p}, L^\infty)$ is a Calderón couple for $1 \leq p < \infty$, where $\widetilde{L^p}$ is the Köthe dual of Cesàro space $Ces_{p'}$ (or equivalently the down space $L_\downarrow^{p'}$). In particular, $(\widetilde{L^1}, L^\infty)$ is a Calderón couple and this complements the result of Mastyło and Sinnamon who showed that $(L_\downarrow^\infty, L^1)$ is a Calderón couple.